NORTHEAST DEALER ISSUE
Pages 9-16

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FOR RICHER FIELDS

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

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INDUSTRY WEEK

Stauffer Chemical Reveals High Grade Deposits of Phosphate Rock in Idaho

NEW YORK — After nearly five ars of exploration and development rk, Stauffer Chemical Co. has es- lished the existence of large min- e deposits of high grade phosphate k on its patents near Bear Lake, aho, the company announced Jan.

Reserves in the deposits are es- mated at over 5,000,000 tons of ommercial grade phosphate rock nd may, according to Stauffer, be oubled or even tripled if the bene- iciation of lower grade secondary eds proves feasible.

The development work is being ried out for Stauffer by San Fran- co Chemical Co. in collaboration h Stauffer's geologists. The work ludes a 1,400 ft. adit extending at ning depth to the main phosphoria l, a 3,000 ft. drift along the main bed, and a 1,500 ft. raise from the adit and drift to surface elevation above the deposit. The adit has been completed and the entire development project should be finished by the end of the year. Total cost of the project is estimated at $400,000.

The showings point to an excellent grade of rock, free from serious faulting, which, together with proximity to rail transportation, will make for a very favorable competitive source of supply, Stauffer said.

The Bear Lake deposit will provide a long term reserve for the requirements of Stauffer's west coast phosphate fertilizer plants at Richmond, California, Vernon, California, and Tacoma, Wash., as well as for the Garfield, Utah, plant of Western Phosphates, Inc., an associated company of Stauffer, the firm said.

hillips Pacific to Start Construction on nhydrous Ammonia Plant in Washington

BARTLESVILLE, OKLA. — Phil- s Pacific Chemical Co. will begin nstruction this spring on a 200- s-a-day anhydrous ammonia plant its recently acquired 200 acre site r Kennewick, Washington. The is seven miles south of Kenne- k on the west bank of the Colum- River, near Finley.

nnouncement of these plans was de jointly by K. S. Adams, chair- n of the Phillips Petroleum Co. Ray C. Fish, chairman of Pacific rthwest Pipeline Co., joint owners Phillips Pacific Chemical Co. The nt is scheduled for completion late year.

aw material natural gas will be plied by Pacific Northwest Pipe- Co. (Croplife, Jan. 16, 1956, page and July 18, 1955, page 1). Phil- s Chemical Co., wholly owned sub- iary of Phillips Petroleum Co., will erate the plant which will be constructed by Hydrocarbon Construction Corp. Architectural designs and the purchase of equipment and materials are already under way by Fish Engineering Corp., Houston, Tex.

Marketing of the plant's anhydrous ammonia output to distributors will be handled by Phillips Petroleum Co. Sales offices serving the Intermountain, Inland Empire and Pacific Northwest regions, are located in Spokane, Wash., and Salt Lake City, Utah.

Company officials state that the plant location was chosen largely because of its proximity to the Pacific Northwest Pipeline Corp.'s natural gas pipeline being laid from the San Juan basin of northwest New Mexico and southwest Colorado. This plant is the first new industry in the area to result from the availability of natural gas, the company says.

alspray Liquid Ammonia Plant Opens as tart of $16 Million Expansion Program

MODESTO, CAL.—The new liquid rtilizer plant constructed here by lifornia Spray Chemical Corp. has ne into production, the company s announced. The plant, capable of oducing 400 tons a day of aqua mmonia and 100 tons of neutral mix rtilizers, is situated adjacent to lspray's Ortho dust mill, ware- use and office in Modesto.

Arthur W. Mohr, Richmond, Cal., sident of the corporation, officiat- at the opening ceremonies and desto's mayor Harry Marks pushed button that set the machinery in on. J. P. Arrigoni, vice president, icated Metals, Inc., plant con- ctors, explained the plant's oper- n to a gathering of dealers which dles Ortho products.

ording to Mr. Mohr, the new ities make possible shipment of formulations to any part of the Sacramento and San Joaquin valleys within 24 hours. He said that the Modesto plant has serviced the area with dry fertilizers for several years in conjunction with its long established line of insecticides, fungicides, and weed killers. He added that the addition of the new operation will make easily accessible a supply of liquid fertilizer in the area.

"This Modesto plant is a forerunner of a $16,000,000 fertilizer plant program now being undertaken by the Standard Oil Company of California and its subsidiary, California Spray-Chemical Corporation, Mr. Mohr explained. "Construction of the six units of the fertilizer plant is already under way, and their production will greatly expand Western sup-

(Continued on page 21)

Hoppers Threat to 20 Million Acres of Rangeland in 1956

WASHINGTON—Grasshoppers are likely to present a serious threat next year to cropland in more than 15 states and to some 20 million acres of rangeland in 16 states, the U.S. Department of Agriculture warned Jan. 20.

The over-all picture of the grasshopper situation is gleaned from late summer and fall surveys. A survey next spring, after hoppers hatch, will show how winter and spring weather and other natural conditions have altered the picture, and will permit final estimates of acreage that will warrant control during the 1956 growing season, USDA said.

Grasshoppers appear generally more threatening to crop areas in 1956 than they were in 1955. Cropland grasshopper infestations are expected to vary from light to severe in parts of Minnesota, Wisconsin, Iowa and the northern half of Illinois and Indiana.

The hoppers may also cause spotted damage to crops in portions of California, Michigan, Ohio, Missouri, Texas, in the eastern third of North

(Continued on page 5)

Sulfur Production

WASHINGTON — The domestic sulfur industry produced 545,159 long tons of native sulfur and 36,100 tons of recovered sulfur (of a purity of 97% or greater) during October, according to reports of producers to the Bureau of Mines, U.S. Department of the Interior.

Nitrogen Output Capacity Year Ahead of Goal

ODM 1957 Target Figure Exceeded At Start of 1956

WASHINGTON, D.C. — Total domestic nitrogen capacity in all forms as of Jan. 1, 1956, is estimated by the U.S. Department of Commerce to exceed earlier nitrogen production goals set by the Office of Defense Mobilization for completion a year later. The total capacity of 3,618,000 tons N existing in the U.S. on Jan. 1, 1956, is 118,000 tons greater than the 3,500,000 tons set by ODM for 1957. The Chemical and Rubber Division of the Department of Commerce, which issued the figures, states that "It appears that by this target date

(Continued on page 8)

$50 Million Economic Assistance Program For India Announced

WASHINGTON — Approval of $50 million to India for economic development assistance has been announced by the International Cooperation Administration.

The funds will be used to continue programs such as acquiring steel for railways, fertilizer, DDT for malaria control, grain storage facilities and other purposes.

Wisconsin Group Is Told: "Follow Labels and Don't Take Chances on Residues"

MADISON, WIS. — Chemical insecticide residues—their effects and hazards on canning crops—received a thorough hearing by chemical research men from industry, the University of Wisconsin, and government representatives at the 10th Annual Insect Control Conference here Jan. 11-12.

Nearly 170 chemical industrial representatives and University of Wisconsin specialists heard reports on chemical insecticide research at the conference. All sessions were held in the Loraine Hotel.

The conference was highlighted by a six-man panel of experts which brought this advice to vegetable and canning crop growers: "Follow the labels on all insecticide containers — and don't experiment." Residue dangers may result from spraying canning crops, such as peas or sweet corn during the growing season, it was brought out. Under some conditions, some chemicals leave a residue that may be poisonous to persons or animals who consume the food.

Panel speakers were C. C. Alexander, head of research for Geigy Chemical Corp., New York; J. E. Casida, University of Wisconsin entomologist; M. P. Verhulst, secretary of Wisconsin Canners Assn.; J. F. Dunn, supervisor of food inspection, Wisconsin Department of Agricul-

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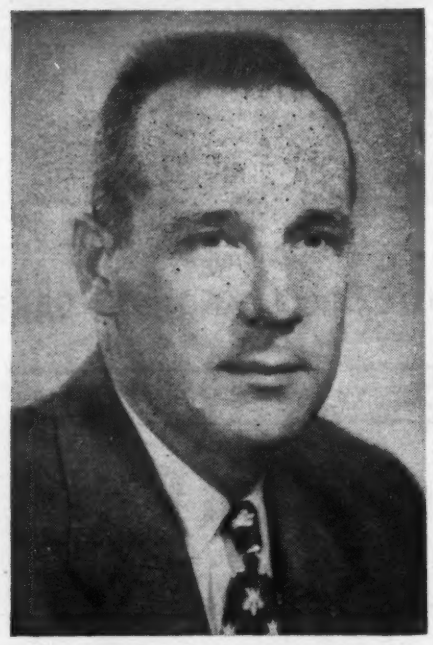


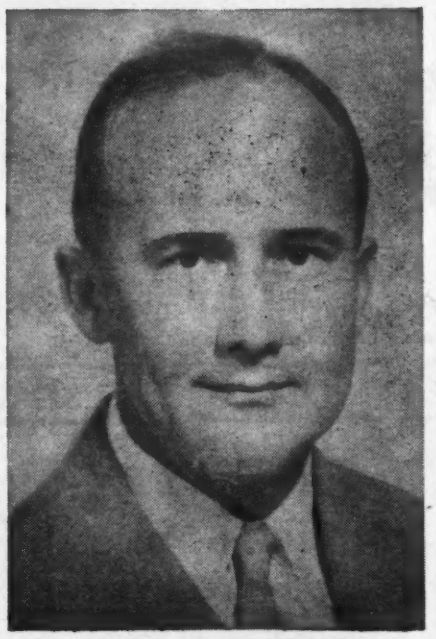
George C. Kempson

Lion Oil Announces Changes in Chemical Sales Offices

EL DORADO, ARK.—Lion Oil Co., a division of Monsanto Chemical Co., has opened new chemical sales offices in Des Moines, Iowa, and has moved the Montgomery, Ala., chemical sales offices to Atlanta, according to an announcement by A. F. Reed, division vice president for sales.

The new offices at Des Moines, which are located in the Insurance Exchange Bldg., are under the management of George C. Kempson, formerly assistant manager of the Montgomery sales office. The Des Moines office will head what has been designated as the midwestern sales district.

Lion's newly-established southeastern district sales offices in Atlanta are located in the 1401 Bldg. and are under the direction of R. S. Johnson.



R. S. Johnson

Other divisions of Monsanto Chemical Co. also maintain sales offices in the 1401 Bldg.

Mr. Kempson, a native of Cullman, Ala., was graduated from Alabama Polytechnic Institute (Auburn) in 1941 with a bachelor of science degree. He had a wide background in chemical and fertilizer sales when he joined Lion Oil Co. in July, 1950, as a sales representative at Macon, Ga. A World War II Navy veteran, he holds the rank of lieutenant senior grade in the Inactive Naval Reserve.

Born in Millport, Ala., Mr. Johnson was graduated from Mississippi State College in 1938 with a bachelor of science degree in agriculture. Following army service during World War II, he transferred to the Army Reserve and presently holds the rank of lieutenant colonel. He was employed by Lion Oil Co. as a senior sales representative at Jackson, Miss., in September, 1952, and in 1954 was appointed assistant district sales manager at New Orleans.

Diamond Alkali 1955 Earnings, Sales Set Record

CLEVELAND—Sales and earnings of Diamond Alkali Co., Cleveland, in 1955 climbed to record high levels, it was reported recently on the basis of unaudited figures by Raymond F. Evans, chairman and chief executive officer of the firm.

Sales of Diamond chemicals in 1955 totaled approximately $110,280,000, representing an increase of 18% above the 1954 figure of $93,505,000, the previous all-time peak.

Net earnings in 1955 increased 53% to approximately $8,440,000, equivalent, after preferred dividends to $3.38 per share based on 2,338,866 common shares outstanding after 3% stock dividend, as compared to 1954 results of $5,528,600, or $2.14 on the same number of shares.

In reviewing the company's current financial position, Mr. Evans said that due to the availability of funds beyond those earmarked for normal requirements, the company has prepaid one year in advance a $1,200,000 installment on bank notes. At the year end Diamond had $14,273,000 in cash and equivalent compared to $7,000,000 at the close of 1954.

The company's position as of Dec. 31, 1955, is further enhanced, Mr. Evans added, not only by the anticipated generation of cash through depreciation charges in 1956 estimated approximately $9,500,000, but also by the fact Diamond has no further installments due on long-term obligations until 1957.

Mr. Evans announced that on the basis of this current condition beyond current needs, the board of directors at a special meeting called for redemption of $6,000,000 par value of the company's 4.40% convertible preferred issue. Redemption record date is Jan. 19 and redemption date is Feb. 24. Privilege of converting will exist through the close of business Feb. 21. The preferred is convertible at the rate of 2.369 shares of common for each share of preferred.

Redemption price is $103 per share, plus accrued dividends to redemption date amounting to $.85½ per share of preferred stock. Bankers Trust Co. of New York and Mellon National Bank and Trust Co., Pittsburgh, will act as redemption agents.

JOINS DOUGLAS—J. H. (Jim) Sun has been appointed controller of th Douglas Chemical Co., manufacture of insecticides, grain fumigants an grain protectants. Mr. Sund, a gra uate of the University of Kansas, wa formerly associated with Bonsu Inc., in Kansas City, Mo.

Southern Personnel Of Calspray Attend Meeting in Memphis

MEMPHIS—The control of cotto pests and diseases, from the treatin of seeds to the harvest, were discus sed during a three-day meeting her of southern sales personnel of Cal fornia Spray-Chemical Corp.

Discussions touched on all phase of control of insect pests and plan diseases that cost growers in th South millions of dollars each year.

The meeting was attended by ma keting research, and manufacturin executives and sales personnel of th firm, which makes Ortho agricultura insecticides, fungicides and herbicide

H. J. Grady, vice president an eastern regional manager of marke ing for the company, said every phas of Calspray's agricultural marketin plans this year were discussed.

The meeting, marking Calspray 50th year, was keynoted by A. W Mohr, Calspray president.

Personnel attending the meetin are assigned to territories coverin all the southern states east of Ne Mexico, with the exception of Florid

University of Vermont To Publish News Letter for Dealers

BURLINGTON, VT. — Dealers of lime, seed and agricultural chemicals in Vermont will soon receive copies of a publication designed to better acquaint them with recommendations of the Vermont Extension Service.

"Dealergram," the name given to a news letter, will be mailed at irregular intervals during 1956. Each issue discusses a single topic and will contain information that should be of help to farmers and dealers in their business. This idea is set forth with the slogan, "A satisfied farmer is your best customer."

Winston Way, Vermont extension agronomist, says the first issue is devoted to alfalfa varieties. Seeds of two varieties cemented to the letter will demonstrate that their appearance does not reveal the yield differences known to exist. One has consistently and repeatedly produced a half ton of hay per acre per year more than the other.

Subsequent issues will deal with oat varieties, soil testing, liming, fertilizers, pasture hints, insects on crops, fly control and weed killers. "Dealergram" will be written by Mr. Way and George MacCollom, extension entomologist. It is being sent to some 400 dealers who serve and advise Vermont farmers.

FDA HEAD TO SPEAK

NEW YORK—George P. Larrick, commissioner of the Food and Drug Administration, will be guest speaker Jan. 31 at the mid-winter luncheon meeting of the Drug, Chemical & Allied Trades Section of the New York Board of Trade. He will speak on the "Fiftieth Anniversary of the Food and Drug Laws." The meeting will be held at the Hotel Commodore.

M. C. Van Horn, Named NAC Convention Head

WASHINGTON—M. C. Van Horn, Florida Agricultural Supply Co., Jacksonville, Fla., has been named general chairman for the National Agricultural Chemicals Assn.'s spring meeting in Hollywood, Florida, March 14-16. L. S. Hitchner, NAC executive secretary, has announced.

Frank L. Holland, manager, Florida Agricultural Research Institute, Winter Haven, Fla., has been named honorary chairman for the event, and Dr. Alfred Weed, Olin Mathieson Chemical Corp., Baltimore, has been named chairman of the program committee.

John W. Reavis Named To Diamond Board

CLEVELAND — John W. Reavis, Cleveland attorney, has been named to the board of directors of Diamond Alkali Co., Cleveland, it was announced here recently at the company's national headquarters by Raymond F. Evans, chairman and chief executive officer, following a meeting of the Diamond Board. Mr. Reavis' election fills a vacancy.

Technologist Named

BERKELEY, CAL. — C. Dean McCarty has been named field technologist for the Agricultural Extension Service in Southern California, it has been announced by H. W. Schwalm, assistant director of the Agricultural Extension Service stationed at the University of California's Riverside campus. Mr. McCarty, who has been on the staff of the Citrus Experiment Station since 1949, was appointed to expedite the field application of new developments in the use of chemical weed controls and growth regulators.

Bartels & Shores Opens Wichita Warehouse

WICHITA — Bartels & Shores Chemical Co., Kansas City, Mo., has opened a branch warehouse at 700 E. 17th, Wichita, for direct service to this area.

Ralph E. Shores, an official of the company, said the 20,000-square-foot warehouse includes rail and truck dock facilities and has been completely stocked for the distribution of agricultural and industrial chemicals. Mr. Shores and Wilbur F. Bartels, both of Kansas City, were in Wichita for the opening of the new warehouse.

John W. O'Dell has been transferred from Kansas City as warehouse sales manager. Two other Kansas City men assigned to the Wichita branch are L. A. Denny, assistant sales manager and Roy Geary, office manager.

North Carolina Sales

RALEIGH, N.C.—Fertilizer movement in North Carolina during November totaled 35,352 tons, compared with 47,294 tons in November, 1954, according to the North Carolina Department of Agriculture. Sales in the first five months of the fiscal year (July-November) totaled 172,030 tons, compared with 199,629 tons in a corresponding period in 1954.

Columbia-Southern Plans New Laboratory

PITTSBURGH, PA. — Columbi Southern Chemical Corporation h just disclosed plans for an extensi expansion of research and develo ment work at its Barberton, Ohi plant.

According to Joseph A. Neubaue vice president and technical direct for the company, the program w cost in excess of a million dollars a will include the construction of ultra-modern research building. T contract for the new building, whi will be under construction immed ately, has been awarded to Helle Murray Company of Youngstow Ohio. The architects are Wagner a Luxmore of Akron.

The new research unit, containi about 40,000 square feet of flo space, will be located adjacent to t company's chemical manufacturi facilities at Barberton. It will ha three floors plus a basement and w include a library and conference roo in addition to laboratories and offic

PEACH GROWERS TO MEET

CLEMSON, S. C. — The annu meeting of the South Carolina Pea Council will be held at the Clems House Jan. 24-25.

ow Chemical les, Net Gain in x-Month Period

IDLAND, MICH. — The Dow mical Co. has reported sales of 2,971,210 for the six months period ed Nov. 30, 1955, as compared h $222,096,806 for the correspond- period in 1954.

Net earnings were $28,339,615, ounting to $1.22 per share of com- n stock as against $16,551,869 in previous year, which had amount- to 71¢ per common share after viding for preferred stock divi- ds of $303,869. The preferred stock ue was later called in.

Earnings before taxes on income e from $33,716,054 to $54,549,289. Depreciation and amortization for six months remained about even $37,592,000 compared with $37,- ,000 in 1954, but U.S. and foreign ome taxes were up substantially m $17,164,185 to $26,209,674.

For the three months period ended v. 30 Dow reported a rise in sales m $114,274,296 to $144,804,539. rnings before taxes rose from $16,- 6,361 to $33,055,433 while net earn- s were up from $8,007,841 to $16,- 5,968. The latter were equivalent 35¢ and 71¢ per common share pectively.

Taxes for the quarter more than ubled at $16,439,465 compared with 198,520 in 1954 while depreciation d amortization remained nearly n at $18,849,000 compared with 8,810,000.

chools for Crop lots to Be Topic California Meeting

LONG BEACH, CAL.—The possi- ty of establishing flight schools state agricultural colleges for ining of agricultural pilots will be of the major topics at the sixth ual convention of the California ricultural Aircraft convention to held in Long Beach, Jan. 26-28 Long advocated by the agricultural craft industry and many state and ional farm experts, the proposal w is receiving direct attention of h federal and state officials. Jan. as a prelude to the convention, meeting was held in the state cap- in Sacramento.

Scheduled to attend were Gale F. nson, agricultural operations spe- list of the Civil Aeronautics Ad- nistration from Washington, F. M. iggs, dean of the University of lifornia College of Agriculture at vis and Mrs. Wanda Branstetter, retary of the California Agricul- al Aircraft Assn.

Texas A&M College already has ugurated agricultural flight train- and has graduated its first class. ee page 7 of the Nov. 21 Croplife.) "Agricultural aircraft operator ining is not just the business of rning to fly an airplane," said nry Moore of Tulare, Cal., pres- nt of the California Agricultural craft Assn. "It entails technical owledge in agriculture, entomology l use of chemicals including toxic rbicides and insecticides.

"The agricultural aircraft business long ago outgrown the days of and miss operation by ex-barn- rming pilots, and today is the third gest branch of the nation's avia- n industry, with more than 1,200 nes in operation in California e."

isconsin Fertilizer lers to Meet Jan. 30

ADISON, WIS.—Wisconsin lime fertilizer dealers will meet at torial Union at the University of nsin Jan. 30 during the univer- Farm and Home Week. Speak- will include W. H. Garman, Na- Plant Food Institute agron-

Fruit and Nut Advisory Group Sees Need for Virus, Nematode Study

WASHINGTON — Expanded work on virus diseases and on control of nematodes were considered as the most urgent of several high-priority research needs in the field of fruit and nut crops by the U.S. Department of Agriculture Deciduous Fruit and Tree Nut Research and Marketing Advisory Committee at its annual meeting in Washington recently.

Among top-priority marketing research proposals urged by the committee was expanded work to determine the causes of post-harvest losses in fruit quality, including development of methods to promote desirable changes and control undesirable changes in fruit products during storage and marketing.

The committee also asked for:

Expanded work on the breeding of grapes for greater disease resistance and high quality, of blackberries to produce thornless types, and of strawberries for resistance to red stele and other diseases.

Expanded research on insects as carriers of virus diseases of tree fruits, grapes, berries, and other fruits.

Further effort in the fields of plant exploration and introduction, and in research to determine the residues of pesticide chemicals in or on fruits and soils and their effect on product quality.

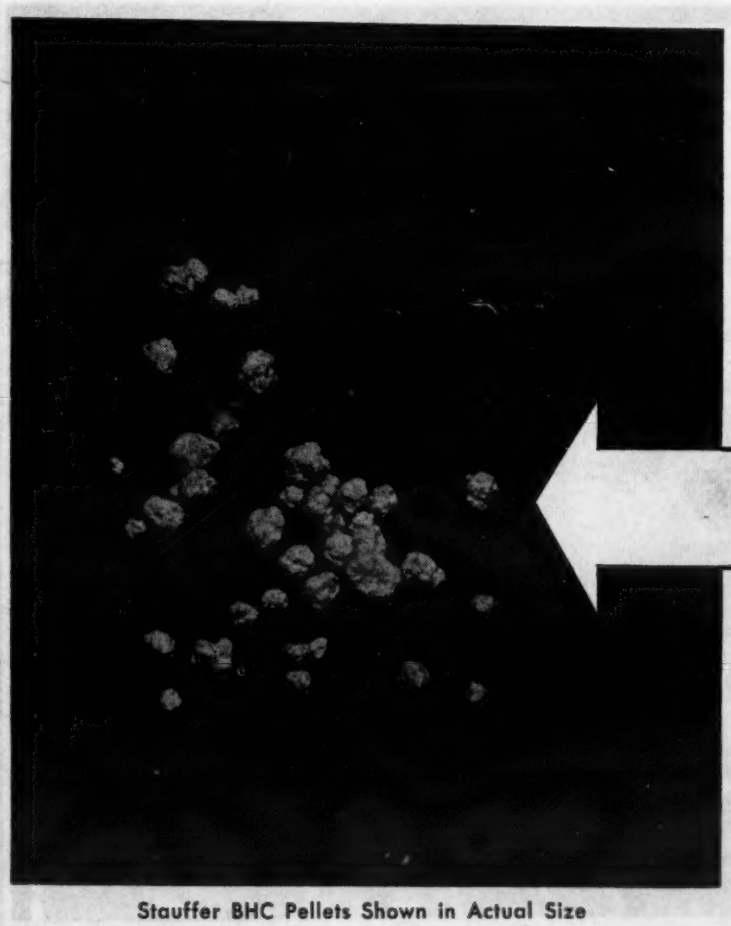
Dr. J. Harold Clarke, commercial nursery owner of Long Beach, Wash., was elected by committee members as their chairman for the next two years, succeeding Elon J. Gilbert of Richey and Gilbert Co., Yakima, Wash. As its new vice chairman, the committee elected A. W. Christie, California Walnut Growers Assn., Los Angeles, succeeding Walter A. Reich of A. Reich and Sons, Inc., Kansas City, Mo.

University of Idaho To Make Khapra Survey

MOSCOW, IDAHO — A survey of grain, feed and food products storage facilities in Idaho will be conducted this spring by the department of entomology of the University of Idaho College of Agriculture, according to H. C. Manis, department head. The survey will be made by Arthur R. Gittins, survey entomologist with the university's agricultural experiment station.

One of the principal objectives of the survey, Dr. Manis indicates, will be to determine whether any khapra beetles have slipped into the state. Parts of southern Idaho are believed favorable to this new and dangerous insect.

During his survey work, he will solicit the cooperation of seed and grain elevator managers, handlers of stock feeds and food products in watching for the new beetle.



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Program Set for California, Western Weed Control Conferences Feb. 15-17

SACRAMENTO — The tremendous progress being recorded in the battle to control agriculture's number one enemy—weeds—will be reflected in reports of numerous nationally recognized authorities to the combined sessions of the California Weed Conference and the Western Weed Control Conference in Sacramento and Davis, Cal., February 15-17.

The first two days of the conferences will be held at Governor's Hall on the State Fair Grounds in Sacramento. On Feb. 17 the conference will move to the University of California Airport at Davis.

Gov. Goodwin J. Knight of California will be one of the principal speakers.

Weed control on the national and international fronts will be the theme of the opening sessions Feb. 15. With Walter S. Ball, Sacramento, president of the Western Weed Control Conference, presiding, the discussion lead-off men will be W. W. Allen, Dow Chemical Co., Midland, Mich.; Henry Wolfe, extension weed specialist, Washington State College, Pullman; Dan Watkins, Ivon Watkins Chemical Co., New Plymouth, New Zealand; Arne Carlson, E. I. du Pont de Nemours & Co., Wilmington, Del., and E. G. Anderson, secretary, National Weed Committee, Ottawa, Canada.

Presiding at the first afternoon session will be Boysie Day, assistant plant pathologist, University of California, Riverside. W. C. Jacobsen, California director of agriculture, will introduce Gov. Knight.

The Governor's address will be followed by reports of the research committee, Western Weed Control Conference, of which Mr. Day is chairman. Members include William R. Furtick, department of farm crops, Oregon State College, Corvallis, Ore.; Leonard L. Jansen, plant physiologist, U.S. Department of Agriculture, Logan, Utah; Fred H. Tschirley, department of weed investigations, U.S. Department of Agriculture, Tucson, Ariz.; William L. Lee, agronomist, USDA, Laramie, Wyo.; E. R. Lanning, Jr., horticulture department, Oregon State College, Corvallis; Fred H. Arle, USDA, Phoenix, Ariz.; J. Wayne Whitworth, agronomy department, New Mexico State College, State College, N.M.; Herbert M. Hull, USDA, Tucson; D. C. Myrick, agricultural economist, USDA, Bozeman, Mont., and J. R. McCambridge, Chipman Chemical Co., Portland, Ore.

A panel discussion on the question "What Is New in Weed Control" scheduled for the evening session Robert Underhill, Dow Chemical C San Francisco, will moderate. Pan ists will include Robert Beatty, rector of research, American Che ical Paint Co., Ambler, Pa.; Arth O. Jenson, American Cyanamid C Oakland, Cal.; J. R. McCambridg D. W. Rake, Pacific Coast Borax C Los Angeles; R. N. Raynor, agricu tural chemical development, Do Chemical Co., San Francisco; D Lyall F. Taylor, Du Pont, San Fra cisco; Ely Balgley, Heyden Chemic Co., New York City; Robert J. Zedle agricultural chemicals division, Ca bide and Carbon Chemical Co., Yo kers, N.Y.; Joe Antognini, Agricu tural Research, Stauffer Chemic Co., Mountain View, Cal.; Dr. K. Maxwell, Monsanto Chemical C Santa Clara, Cal., and Vern W. Olne Geigy Co., Inc., Fresno, Cal. Allen Lemmon, chief of the Bureau Chemistry, California Department Agriculture, will discuss the Mill Bill with respect to the Californ Pesticide Act.

Presiding officer for the Feb. session will be Paul F. Dresher, S Jose, president, California Weed Co ference. The main presentation the morning session will be that W. A. Harvey, extension weed sp cialist, University of Californi Davis, on the subject "Our New Fro tiers." Mr. Harvey's speech will followed by a panel discussion what various weed control agenci in California are doing and what t work is costing.

Participants will be Milton Miller, extension agronomist, Unive sity of California, Davis; Mr. Da Arthur Jensen, American Cyanam Co., Orinda, Cal.; R. M. Howie, ag cultural commissioner, Riversid County, Cal., and C. M. Gordo rancher, Yolo County, Cal.

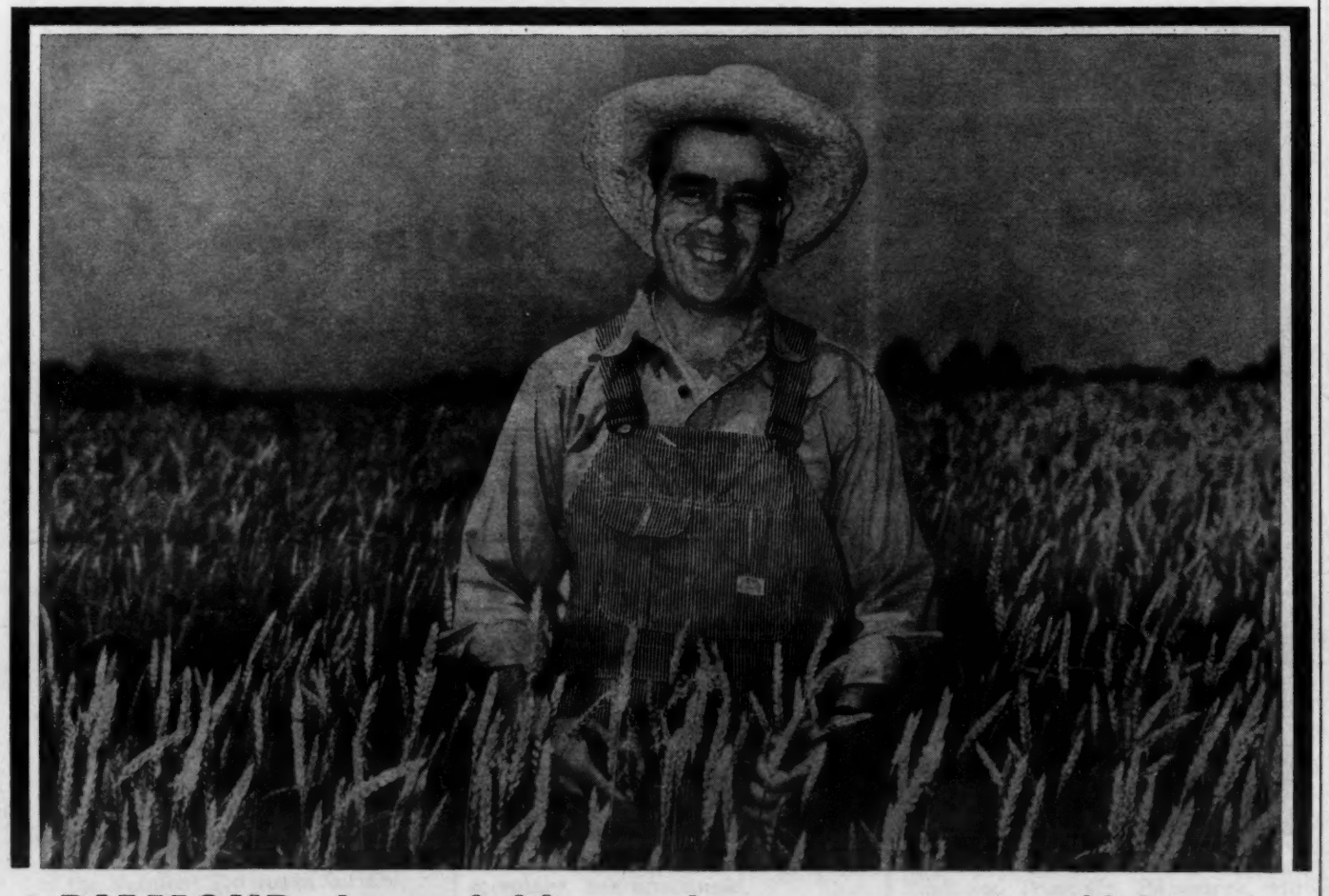
After the panel discussion, Lest J. Berry, extension range specialis University of California, Davis, w preside for the remainder of t morning. Speakers will be Osc Fudge, Imperial Irrigation Distric El Centro, Cal., discussing irrigatio problems and costs, and O. A. Leo ard, associate botanist, University California, Davis, on progress brush control through use of chem icals.

Following will be a panel discu sion of weed control in irrigated cro with the following panelists: Warre Hageman, California Packing Cor Woodland, Cal.; C. L. Foy, assista specialist in botany, University California, Davis; E. E. Stevenso Modesto, Stanislaus County far adviser.

Bruce Wade, agricultural commi sioner of Shasta County, Cal., w preside at the Feb. 16 afternoon se sions. Two panels are scheduled: t first discussing weed control pro lems involving various crops: grape J. R. Fisher, Dow Chemical C Fresno; alfalfa, Ogden C. Riddle, U versity of California, Davis; ric Hughes Williams, South Dos Palo Cal.; sugar beets, Ralph Heath, Hol Sugar Co., Tracy, Cal.; irrigated pa tures, Victor P. Osterli, Universi of California, Davis.

The second panel on the subje of perennial weed control proble will include Murray Pryor, field su ervisor of weed control, Californ Department of Agriculture, Sacr mento, morning glories; John Mill associate agronomist, USDA, Shafte Cal., Johnson and Bermuda grass James W. Koehler, district supervis of rodent and weed control, Californ Department of Agriculture, Pomon Whitetop; Graham Randall, distri supervisor of rodent and weed co trol, California Department of Ag culture, Sacramento, knapweed; M Day, nutgrass.

A question box period will follo with L. M. Stahler, Pacific Coa Borax Co., Los Angeles, as mode ator. The conference banquet will held the evening of Feb. 16 at Ho Senator, Sacramento.



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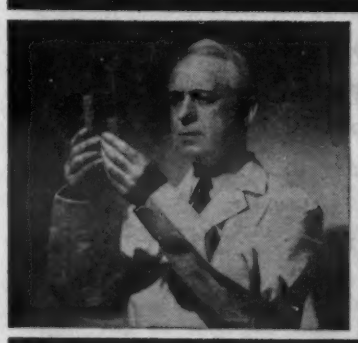

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- 2,4,5-T Brush Killers
- Wettable powders, dust concentrates, emulsifiable concentrates and oil solutions based on our technical grade chemicals.

id-South Farmers ally Up Losses from id-Winter Drouth

MEMPHIS — Mid-South farmers st week were counting their losses small grains and winter cover ops, suffering from effects of a rious mid-winter drouth. The threat forest fires increased, too.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee eported oats are yellowing and dy- g in some areas from lack of oisture and early clovers have not egun to grow.

In a number of counties farmers e having to haul water for their estock and in others stock ponds e dangerously low.

Mississippi's mid-winter drouth has ought growth of grazing crops to halt.

However, farmers are taking ad- ntage of the dry soil for sub-soiling d taking soil samples.

Another result of continuing dry eather is a greatly increased fire zard. Farmers are advised to use treme caution to prevent fire from stroying stored hay and frosted ass on permanent pastures.

"Fire will kill out young clover and ring grasses," officials advised.

Arkansas farmers were continuing unusually heavy amount of field eparation for this time of year, t also were beginning to get into lot of "paper work."

Agricultural Extension Service okesmen said the paper work in- udes selection of acreage in advance this year's planting season, plus e filling out of income tax forms.

Farmers also were busy at about- e-farm chores, such as repairing ildings or fences and taking care of her items which time wouldn't al- w during the planting season.

The state generally needed a good aking rain, said the extension rvice.

It was back to the fields for West nnessee farmers as land prepara- n moved to the top of the must t.

Judd Brooks, district farm agent, id preparation for spring oats is a cessity at this time if farmers ex- ct a good harvest in April and ay.

Mr. Brooks said cotton farmers ll begin land preparation shortly. me already have begun disking for e 1956 crop, he said. Lespedeza eding and preparation for hay and ed crops need attention now, Mr. rooks said. The district agent said e West Tennessee farm picture oks good in general but a rain is eeded to encourage winter cover ops.

The Southeast Missouri cold weath- kept farmers out of the fields, W. James, county agent at Caruthers- lle, Mo., said. He pointed out that e sunny skies and wind are drying t the soil. Some land was broken, t not much since land that had fficient moisture was frozen part the week.

aryland Agricultural hemical Conferences Set

COLLEGE PARK, MD. — Mary- nd agricultural chemical confer- ces have been scheduled by the niversity of Maryland at County uilding in Easton Feb. 6, Episcopal rish House in La Plata Feb. 9, and rancis Scott Key Hotel in Frederick b. 10.

Dr. C. L. Weaver, university plant thologist, is chairman of the com- ittee on arrangements. The sessions ke the place of the two-date state- le meeting formerly held in Balti- re.

wa Conference

MES, IOWA — The annual Iowa rtilizer Industry Conference will be d Jan. 30-31 at Iowa State Col- e, Ames.

HOPPER THREAT

(Continued from page 1)

Dakota, Nebraska and over most of Kansas and Oklahoma. Crops in isolated, cultivated areas of most of the remaining states to the West may suffer some grasshopper damage.

In 16 midwestern and western states, grazing on 20 million acres of rangeland may be seriously damaged by grasshoppers. The rangeland problem in 1956 appears more widespread and severe in the Southwest than at any time in recent years.

The worst rangeland threat centers in western Oklahoma, southwestern and south-central Kansas, extreme southeastern Colorado, the Panhandle of Texas and eastern New Mexico. Areas that will bear watching are found in Montana, California, Nebraska, Oregon, Wyoming, Arizona, Idaho, Utah, Washington, Nevada and Missouri.

The prolonged drouth, now in its sixth year in some Western range areas, has kept grasses down but has favored rapid increase of many kinds of range grasshoppers, USDA noted. Drouth last summer kept many ranchers from putting money into grasshopper control because grasses were hardly worth saving. By the time rain did come in some areas and insecticides were applied, many grasshoppers had already deposited eggs from which hungry 1956 hordes will hatch.

On privately owned rangeland, a federal-state-rancher division of costs and operations usually makes grasshopper control possible. What proportion of next year's vast acreage will be sprayed depends upon what ranchers want to do to protect their grazing and upon finances available from the various cooperating agencies.

In 1955, 1,648,000 acres of rangeland were sprayed by airplane to control grasshoppers in 11 western states, at an average cost of 58¢ per acre. At that rate, control that usually protects an area for a five-year period would cost annually about 12 cents an acre.

It is estimated by USDA that, for each $1 spent for grasshopper control in recent years, more than $38 in crops and grazing has been saved. In 1954, reporting states estimated the value of crops lost to grasshoppers at more than $28.5 million, and of crops saved by control measures at almost $54 million.

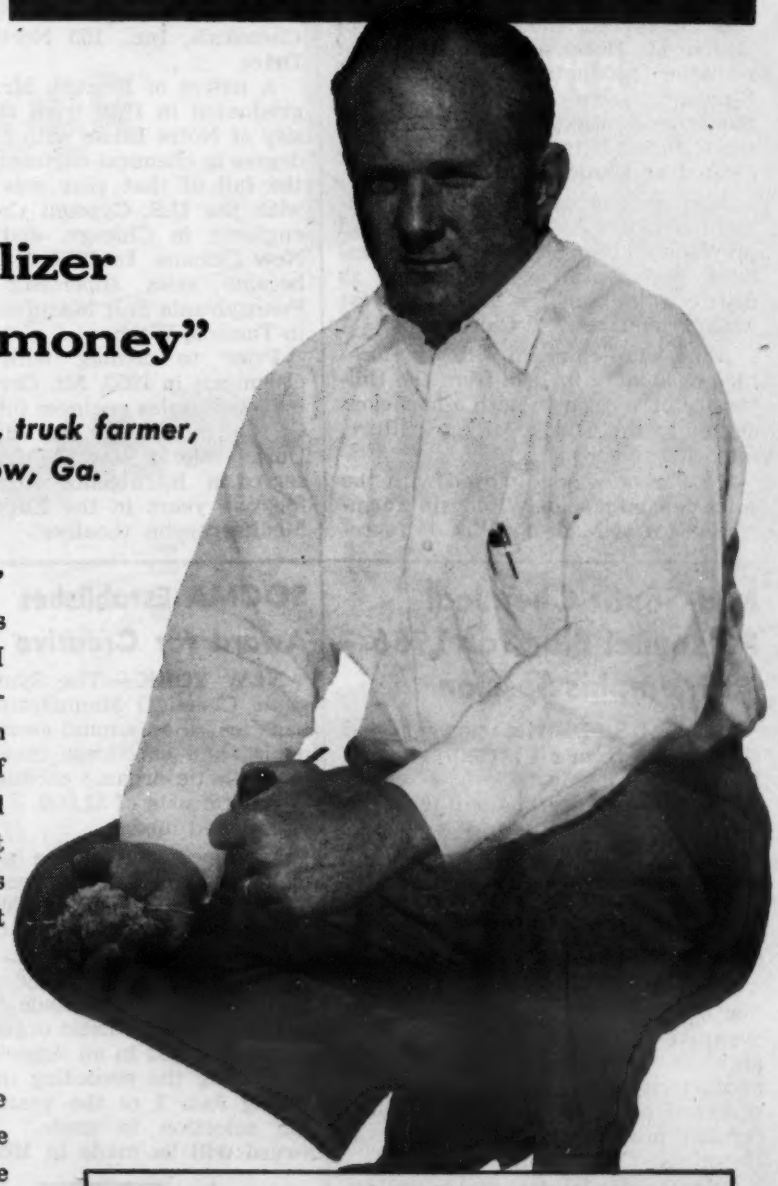
Commissioner Named

COLUMBIA, S. C.—W. L. Harrelson of Marion County has assumed the duties of South Carolina commissioner of agriculture. He was appointed by Gov. George Bell Timmerman, Jr., to fill the unexpired term of J. Roy Jones, who resigned Jan. 5 for reasons of ill health. Mr. Jones has not been able to work since he suffered a stroke several months ago.

HOW UNION BAG BUILDS MORE BUSINESS FOR THE FERTILIZER INDUSTRY

"Now I know... cutting down on fertilizer actually costs me money"

John Patrick, truck farmer, Marlow, Ga.



"I've known about fertilizer for a long time," says John Patrick, who with his brother Carl runs a 100-acre truck farm near Marlow, Ga., "but I didn't realize that every *dollar* invested in fertilizer can bring a farmer a *four dollar* return in crop value! That's how the U. S. Department of Agriculture figures it. Like a lot of farmers, I'd tried to *save* money by cutting down on fertilizer, but actually I was *losing* money, as I got lower yields on my crops. Now I know fertilizer is my best investment."

Union's information program increases fertilizer use

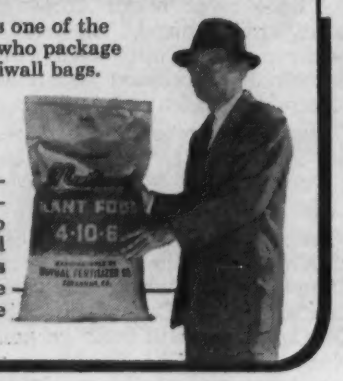
Mr. Patrick discovered his "profit formula" in one of the farm magazines he reads. The article was one of many prepared by Union as part of a countrywide newspaper-radio-television educational campaign to help farmers use more scientific methods.

One of the main purposes of this program is to show your customers how to make the best use of fertilizer. As one of the major manufacturers of Multiwall paper sacks for fertilizer, Union Bag is happy to make this contribution to the industry.

Mutual Fertilizer Company is one of the many leading manufacturers who package their products in Union Multiwall bags.

Mr. Charles Ellis Jr., President, Mutual Fertilizer Company, Savannah, Ga.

"I believe Union Bag's information program on the scientific use of fertilizer will help the farmers. Union does as well with its Multiwalls as it does with its fertilizer program. We use Union Multiwalls. They're among the best."



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Anton M. Horehled

John A. Corrigan

Sinclair Names Two To Positions in Nitrogen Product Sales

NEW YORK — Sinclair Chemicals, Inc., subsidiary of Sinclair Oil Corp. has announced the appointment of Anton M. Horehled as manager of nitrogen products sales to direct Sinclair's sales of anhydrous ammonia and nitrogen solutions from the Calumet Nitrogen Products Plant located at Hammond, Ind.

Also announced was the appointment of John A. Corrigan, who had previously been Sinclair chemical sales representative in Chicago, as district sales manager in the Midwest with headquarters in Chicago.

A native of Harvard, Ill., Mr. Horehled graduated in 1948 from the University of Wisconsin with a bachelors degree in the College of Agriculture, majoring in soils.

In 1948 he was employed with the sales department of Wisconsin Farmco Service of Madison, Wis. as representative at Kaukauna, Wis. From 1951 to 1953, Mr. Horehled was employed in the nitrogen division, wholesale sales department of the Olin Mathieson Corp. in the midwestern area.

Mr. Horehled's headquarters will be at the Chicago office of Sinclair Chemicals, Inc., 155 North Wacker Drive.

A native of Detroit, Mr. Corrigan graduated in 1949 from the University of Notre Dame with a bachelors degree in chemical engineering and in the fall of that year was employed with the U.S. Gypsum Co. as sales engineer in Chicago, and later, in New Orleans. In 1951 Mr. Corrigan became sales supervisor for the Pennsylvania Salt Manufacturing Co. in Tacoma, Wash.

Prior to coming with Sanclair Chemicals in 1953, Mr. Corrigan was industrial sales engineer for the Pure Oil Co. in Chicago and Minneapolis. During World War II, Mr. Corrigan served in intelligence with the army for two years in the European and Mediterranean theatres.

Mid-South Chemical Personnel Plan for 1956 At Memphis Session

MEMPHIS—District managers and their staffs from all areas served by Mid-South Chemical Corp. attended a management meeting here recently.

During the two-day meeting all phases of the company's plans for 1956 operations, financing and sales policies were discussed. Also attending were members of the firm's headquarters staff in Memphis.

Ellis T. Woolfolk, president of Mid-South, told company personnel the eventual solution to the agricultural problem "will be found only in higher productivity at less cost." The importance of nitrogen in a balanced fertility program ranks high, he told them.

"Since most major crops are already mechanized," he said, "the best remaining route to improve production is—increased soil fertility—plus more efficient management."

Districts represented at the meeting included the Rio Grande-Texas division, Louisiana division, Memphis division and Illinois division.

Also present was F. M. Simpson of New York. He is with Petroleum Chemicals Inc., which is representing Continental Oil Co. and Cities Service Oil Co., which will build an ammonia plant at Lake Charles, La. to supply ammonia principally to Mid-South Chemical.

FARM AND HOME WEEK

MANHATTAN, KANSAS—The annual Farm and Home Week program on the Kansas State College campus in Manhattan has been scheduled for Feb. 6-9, according to John M. Ferguson, acting chairman.

SOCMA Establishes Award for Creative Work

NEW YORK—The Synthetic Organic Chemical Manufacturers Assn. has created an annual award "to recognize and encourage creative work in synthetic organic chemistry." The award consists of $1,000, a certificate and a gold medal.

Announcement of the award was made at a recent luncheon meeting of the organization by R. W. Hooker, Hooker Electrochemical Co., president of the group.

The rules of eligibility state that the award is to be made "for creative work in synthetic organic chemistry published in an American Journal during the preceding three years ending Jan. 1 of the year in which the selection is made." The first award will be made in 1957.

Turfgrass Conference Planned in California

DAVIS. CAL.—Weed control in turf and green lawns with less water will be two major topics at the annual Northern California Turfgrass Conference to be held on the University of California campus at Davis, January 30-31.

Jan. 30 William A. Harvey, Davis agricultural extension weed control specialist, will present the latest control measures for Bermudagrass. Robert M. Hagan, chairman of the irrigation department on the Davis campus, will discuss water use according to types of soil and grasses. Elmer Border, superintendent of the Olympic Club Golf Course in San Francisco, will also appear.

The meeting will open with a school on turfgrass Jan. 20. Soil compaction, soil conditioners and water economy will be covered.

Latest Developments in Field Of Fungicides Discussed at Colloquium at APS Meeting

ATLANTA, GA. — The Fungicide Colloquium, an annual event on each year's program of the American Phytopathological Society, brought out a number of important points at the society's recent meeting here.

Under the chairmanship of Dr. L. Gordon Utter, Diamond Alkali Co., Painesville, Ohio, the discussions included notes on the Miller Bill; systemic fungicides, nematode control and the role of industry in meeting the needs for new fungicides.

W. B. Rankin, assistant to the Commissioner of the Food and Drug Administration, of the Department of Health, Education and Welfare, Washington, D.C., said that the amendment will become fully effective for all fungicides next July. "It already is effective for many of them, but there are extensions of the effective date for others," he said.

Mr. Rankin said that all fungicides will fall into one of four classifications under the amendment. These classes are:

1. Chemicals that are not considered poisonous as used on crops. In this group are sulfur, lime sulfur and the sodium and potassium analogues of lime sulfur.

2. Chemicals that are considered poisonous, but are used in agriculture in such a way that their residues do not present any foreseeable hazard to man. These may be exempted from the requirement of a tolerance. Most of the common copper compounds have been exempted when they are used on growing crops before harvest. They are not exempted when applied at time of, or after harvest, he said.

3. Fungicides that are poisonous, but still are safe enough for small residues to remain in or on food without endangering the public health. Tolerances higher than zero are set for them on specific crops. Such tolerances have been set for: Captan, dinitro-O-cyclohexylphenol, several of the dithiocarbamates (Ferbam, Maneb, Zineb and Ziram. And since Nabam is mixed with a zinc salt before use, forming Zineb, the tolerance for Zineb permits Nabam to be used, too); Glyodin and Phygon.

4. Chemicals that have a zero tolerance or its equivalent. Any compound not covered in one of the first three groups will have the equivalent of a zero tolerance when the law becomes fully effective. As a result of the 1950 spray residue hearings, the FDA found that dinitro-O-cresol, dinitro-O-sec-butylphenol and mercury-containing compounds are so toxic that if they are used, they should be used so that no residues remain at harvest.

Other fungicides in this fourth group have the equivalent of a zero tolerance because no higher tolerance has been established for them, and they have not been exempted from the requirement of a tolerance.

These compounds are: Antibiotics for use on plants; formaldehyde; isothiocyanates; quaternary ammonium compounds; spergon; sodium pentachlorophenate, and thiram.

"Chemicals with zero tolerances may be used under proper conditions that leave no residue, and many of them are being used," Mr. Rankin said. "Formaldehyde, spergon, and thiram are used for seed treatment. Broad spectrum antibiotics are used early in the season to control fungus diseases where the time between application and harvest is enough to guarantee their complete removal from the plant."

The FDA official reported that there is also another group of fungicides for which the effective date of the law has been extended. Diphenyl and O-phenylphenol are in this group, he said. "A petition already has been filed for O-phenylphenol, and we understand that a petition will be filed for a tolerance for diphenyl. These chemicals will be in one of the first four groups when the petitions are processed."

In discussing the problem faced by the plant pathologist who must recommend fungicides for use on crops during the 1956 growing season, Mr. Rankin reviewed the thinking of the FDA over the past number of years, stating that "the formal tolerances we have been establishing are, for the most part, the same as the old informal tolerances we had when making recommendations to the Department of Agriculture."

So far as 1956 recommendations are concerned, Mr. Rankin said that plant pathologists "can recommend fungicide uses that appear on labels currently registered with the Department of Agriculture. These uses should leave residues that are safe and meet the formal tolerances established under the Federal Food, Drug and Cosmetic Act."

The FDA representative also discussed a number of facts that would help growers to know where they stand under the new law. He emphasized growers must not experiment with new pesticides on crops. "They should use the materials according to label directions; on the crops specified, in the amounts specified and at the times specified," he declared.

It was added, however, that neither the grower nor the public should be alarmed at the need for ordinary prudence on the part of growers. When a tolerance is established, it means that crops should bear no more than the tolerance level of residue. The fungicide involved may be employed usefully in agriculture, a fact that has been established by the certificate of usefulness furnished the FDA by the U.S. Department of Agriculture.

Residues up to the tolerance level are safe, as has been established by adequate experimental studies on animals; and when the pesticide is used properly, it will leave residues that are within the permitted level. Food and Drug will not issue a tolerance unless there is evidence that it can be met, Mr. Rankin said.

The means by which FDA enforces the law were described by the official. He said that before the growing season, the FDA keeps up on new developments in new pesticides and recommendations in spray schedules issued by the states. Then during the growing season, inspectors in various areas keep in touch with state authorities and growers to determine what materials are being used. Samples from farms or shipping points may be picked up for examination and these help to confirm earlier observations regarding the likelihood of spray residues.

During the shipping season, also, some samples will be collected at shipping points and at destination for further reexamination. "When we go into a growing area to make investigations, we will go openly, we will cooperate with the state and local agricultural authorities, we will make every effort to be helpful in connection with our in-

(Continued on page 18)

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

ests in Canada

During the past 10 years Saskatchwan farmers have taken an annual ss of $46 million from insect pests ch as wheat stem sawfly, pale westrn and red-backed cutworms, wireorms and grasshoppers. This was evealed by Dr. Howard McDonald, ead of the Canadian government's ntomological laboratory, at the anual meeting of the Saskatchewan gricultural Societies' Assn. at Sasatoon recently.

Dr. McDonald estimated that the crop losses from these pests over the 10-year period had ranged from 6 to 14% and from $29 million to $64 million.

To this substantial loss could be dded that caused by plant bugs to egumes, other miscellaneous pests uch as aphids, army worms and limbing cutworms to grain, flax and ape; by a multitude of garden pests, y stored grain insect pests and by nsects that affected livestock.

rish Projects

Two new fertilizer plants are to e constructed in the Republic of reland. The sponsor, already wellstablished in the fertilizer trade, is V. & H. M. Goulding, Ltd., of Cork. One plant will be in Cork, the other n Sligo.

The Cork plant is slated to produce 50,000 tons of compound fertilizers and 50,000 tons of superphosphate a year. Sligo will produce 20,000 tons of superphosphate a year. Later, it is hoped to put up another 50,000 ton superphosphate plant in Cork.

The Irish government is anxious to romote fertilizer production in the epublic and it is possible that the Goulding firm will get some official ssistance. Trade reports mention hat both Dutch and German firms ave been asked to consider setting p production facilities in Ireland.

Super Shortage

Australia is still suffering from a hortage of superphosphate, trade ources report. In some districts of New South Wales there is a delay of 2 months in completing the delivery f large orders. In the most favorble circumstances, there is a waiting eriod of at least three months.

Planned plant expansions are expected to go a long way towards reieving the situation within the next ear.

Australian output has shown a teady increase in the past seven ears. In 1948-49, production was ,423,000 tons; in 1954-55, 1,961,000 ons came onto the market. In the ame period the production of ammonium sulfate has jumped from 3,200 tons to 77,800 tons.

The fertilizer industry in Australia s growing rapidly and many firms ave plans on hand to provide better acilities. There is no sign of any ecession in farmers' demands.

yrethrum Quality

The Pyrethrum Board of Kenya, frica, has opened a new laboratory r pyrethrum research at Nakuru, enya. The cost has been assessed at 00,000.

frican Pyrethrum Development, d., states that it is the aim of the aff of the new laboratory to find an nswer to some of the problems conronting the development of the industry which has grown up around the widespread use of pyrethrum.

An effort will be made to find what breeding means can be used to increase the pyrethrin content of the flowers which are necessarily expensive to grow and harvest by hand. Flower volume must be increased, but the pyrethrin content must be preserved. Also coming in for examination will be the breeding of new strains in order to improve the biological activity of the plant.

American processors and users of pyrethrum will use 100,000 lb. of pyrethrins in 1956, equivalent to 65% of world production. The requirement is expected to jump to 200,000 lb. in 1960.

For some time, the governments of British East Africa and the Belgian Congo have been conducting experimental stations in flower culture; now the growers themselves are going in for permanent research to find out why the flower is what it is and how to improve it. This has to be done to meet the growing competition from other products.

Quebec Plant

The Quebec Ammonia Co. had hoped to start work on the construction of a new $8 million ammonia plant at Varennes, Que., last spring. There was delay. Now the company announces that the negotiation of at least one long-term sales contract has enabled arrangements to be made for sufficient financing to cover the plant program.

The Quebec Co. says that it has made a contract to supply Du Pont of Canada's sizeable ammonia requirements and is also negotiating with several other customers in eastern Canada.

If work gets underway this spring, completion can be expected early in 1957. The plant will produce anhydrous ammonia, nitric acid and fertilizer solutions, capacity being rated at 125 tons a day.

The president of the company is Robert Campbell of Vancouver, and finances are being secured in both the U.S. and Canada.

Another big Canadian ammonia plant project is now in the building stage for Canadian Industries, Ltd., at Millhaven, Ont. Completion is expected early this summer. This, it is claimed, will be the biggest ammonia producer in Eastern Canada, with a daily capacity of 200 tons. The bulk of the output will go into CIL's fertilizer production.

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ANHYDROUS REPORT

(Continued from page 1)

(Jan. 1, 1957), capacity may exceed the goal by 682,000 tons N."

In its report on anhydrous ammonia, the Chemical and Rubber Division of the Department of Commerce states that capacity for the production of ammonia on Jan. 1 this year was 4,072,000 tons, or 3,353,000 tons N. Other expansions, most of which are scheduled for completion during 1956, should bring the capacity to approximately 4,757,000 tons ammonia (3,917,000 tons N) early in 1957, it says.

For the sake of perspective, the report recalled that the reported annual capacity for making synthetic anhydrous ammonia in the U.S. on Jan. 1, 1955, totaled 3,545,000 tons, equivalent to 2,920,000 tons N. This early 1955 capacity represents an increase of 108% over that in existence on Jan. 1, 1951, at the beginning of the nitrogen expansion program. The report points out that 1951 figures did not include the capacities of two ordnance-owned plants at Morgantown, W. Va., and Louisiana, Mo., which were not being used for the production of ammonia at that time. These two plants, now being operated by private companies, are presently included in the data.

The projected capacity for 1957, represents a total expansion since Jan. 1, 1951, of approximately 2,495,000 tons N. About 47% of this amount, 1,167,000 tons N, was certified for accelerated tax amortization, with the remainder completed or in process of being constructed without such benefit. The number of plants increased from 19 in January, 1951, to 35 in January, 1955. By 1957, the number is expected to total 52.

Production of anhydrous has been rising continually each year since 1948, the report says. "As the result of the ever-increasing demand as well as new or expanded facilities coming on stream, output each year since 1950 has generally exceeded capacity in existence at the beginning of the year.

"However, it is expected that 1955 production will be somewhat below total capacity on Jan. 1, despite completion of new plants during the year. As reported in June, producers' estimates of their anticipated 1955 production of 3,420,000 tons of ammonia (2,816,000 tons N) represent a 25% increase over 1954 output and 96% of Jan. 1, 1955, capacity.

"On the basis of Bureau of the Census production figures for the first eight months of 1955, this estimate appears somewhat high," the report states. "Unless demand for ammonia increases greatly in 1956, it is expected that production will not exceed 80 to 90% of capacity this year."

"In depicting total nitrogen supply, production of by-product nitrogen (coke-oven ammonium sulfate and ammonia liquor) as reported by the Bureau of Mines and the nitrogen from organic wastes as estimated by the Department of Agriculture, have been added to the synthetic nitrogen output. The 1955 production of by-product nitrogen was estimated by the Chemical and Rubber Division on the basis of output reported for the first eight months. There has been a comparatively small variation in annual output of by-product nitrogen (ranging between 180,000 and 215,000 tons N) in recent years.

"Supplies of nitrogen from organic wastes are estimated to have declined from approximately 40,000 tons in 1950 to 30,000 tons in 1955. As a result of the marked increase in the output of anhydrous ammonia, synthetic nitrogen will account for approximately 92% of total nitrogen production in 1955 as compared with 85% in 1950.

"Imports of anhydrous ammonia, as such, are minor, but imports of solid nitrogenous materials, primarily for fertilizer, have constituted a substantial share of the total domestic nitrogen supply. These imports, which have originated in Canada, Chile, and several European countries, attained a maximum of approximately 520,000 tons nitrogen content in 1953 but tapered off during the next two years.

"Since the outlook is for domestic nitrogen capacity to exceed demand during the next few years, it is expected that imports will continue to decline. However, Canada, which is also expanding its ammonia capacity, will probably continue as a prominent source of U.S. imports of nitrogenous materials."

The figures presented in this report are based on data compiled in connection with a special survey conducted in 1955 by the Chemical and Rubber Division of the U.S. Department of Commerce. The compilation was under the direction of C. Kenneth Horner.

ANHYDROUS AMMONIA—CAPACITY, PRODUCTION AND DISTRIBUTION

(Thousands of short tons N content)

	1953	1954	19
Capacity, Jan. 1*	1,750	2,208	2,9
Production†	1,884	2,259	2,8
Distribution—total‡	1,839.1	2,127.6	
Total fertilizer use	1,223.4	1,577.0	
Production of solid materials	529.6	666.6	
Anhydrous ammonia and solutions used for mixed fertilizers	436.2	510.7	
Anhydrous ammonia and solutions used for direct soil application	257.6	399.7	
Total industrial use	595.1	517.5	
Exports (anhydrous and aqua only)	20.6	33.1	
Production, undistributed	44.9	131.4	

*Capacity as of Jan. 1, 1953, was estimated by the Chemical and Rubber Division, BDSA; th for 1954 and 1955, as reported by producers.

†Production for 1953 is that reported by the Bureau of the Census; 1954 and 1955 data we compiled by the Chemical and Rubber Division from producers' reports; the 1955 figure repre sents producers' estimates as reported in May, 1955.

‡1953 distribution was partially estimated because of a lack of data from one producer.

Southern Agronomists To Meet in Atlanta

ATLANTA, GA.—The Southern Section of the American Society of Agronomy will meet here Feb. 6-8, in connection with the annual meeting of the Association of Southern Agricultural Workers. Headquarters for the convention will be the Atlanta Biltmore Hotel.

The program for the agronomic sessions will include the presentation of papers on crops, soils and grassland farming. Scheduled to preside at different sessions are John Gray, Louisiana Agricultural Experiment Station, Baton Rouge, and Dr. J. Fielding Reed, American Potash Institute, Atlanta.

Navy Purchase

COLUMBIA, S.C.—The Navy has purchased $13,845 worth of granular dieldrin from Carolina Chemical here, according to announcement of a contract by the U.S. Department of Labor Wage, Hour, and Public Contracts Division. Delivery date was December, 1955. A company spokesman said he understood the lot was shipped to Memphis, Tenn., for use against white-fringed beetles.

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20 Big Perils to Your Business

By A. L. Hollenbeck

EDITOR'S NOTE: Better use of present insurance investment, not sinking more money into policies, may be the answer to avoiding heavy uninsured losses, according to A. L. Hollenbeck, secretary, Agricultural and Empire State Insurance Companies, author of the accompanying article. It is claimed that the owners of America's two million retail and service establishments spend more for insurance than any other business group—yet suffer the heaviest uninsured losses. The fact is that the average businessman may spend less time in selecting insurance than in ordering a standard shelf item, with the result that he is overinsured for some perils, unprotected against others. Mr. Hollenbeck's article provides a general guide for solving insurance problems.

The owner of a successful small business — whom I shall call Tom Farley — thought he was pretty well insured. He had life and health insurance for himself, fire, theft, and windstorm insurance covering his business property and merchandise, and workmen's compensation insurance for his employees. He was even covered if a neighborhood Ted Williams were to slam a homerun smack through his big display window.

But one day Mr. Farley hired a handyman to fix the roof of his store, supplying the tools and an old ladder to do the job. The ladder broke as the man was climbing onto the roof, and he plunged to the ground, fracturing a vertebra and suffering serious internal injuries. When he was finally released by the hospital, the repairman sued the storeowner. Court evidence proved the ladder was unsafe . . . and the jury placed full responsibility for the accident on Farley. The $29,500 verdict awarded the repairman may not have been unreasonable, considering the serious nature of his injuries . . . but it dealt a crippling blow to the storeowner who was not insured for one cent of the loss.

Court dockets are filled with similar cases. Small businessmen spend millions each year on insurance—most of it wisely—but not one in a dozen has a real understanding of the big perils facing his business or the policies best suited to his needs. While the success of their business may hinge on ability to offer a broad yet balanced selection of goods and services, most businessmen fail to follow through with this principle when considering their insurance.

Boiled down, the list of perils to a business falls into three broad groups: Those which may result in a large loss, and should be covered by insurance, regardless of odds; those to which the business is constantly exposed, and which may or may not result in serious loss; and those small loss items which occur frequently. A sound insurance program should provide complete protection for the first group, careful selection from the second group to insure adequate coverage, and any additional protection from the third group which may be needed.

This round-up of 20 leading perils may vary somewhat from business to business. Glass breakage could be disastrous to one business, for example, and relatively unimportant to another. Weigh each peril carefully, keeping in mind that hazards to your business operations are equally as important as those to your property, equipment, or stock.

Hazard to Property, Equipment

Fires account for the bulk of business property destruction. Yearly, 56,000 retail stores alone fall prey to this peril, resulting in destruction of stock and records, and costly interruption of business. One survey shows that better than 40% of the businesses destroyed by fire are forced to close their doors for good within a year because of impaired credit or inadequate insurance.

Carelessness and inadequate safeguards are directly responsible for most fires. Recently in Boston, a $1,200,000 fire swept through a five-story leather warehouse which had no sprinkler system. The fire then spread to an adjoining building which had a sprinkler system and proper fire fighting equipment, where it was quickly extinguished.

The basic fire policy, which also insures against loss by lightning, is the cornerstone of any business insurance program. Remember that the amount of insurance carried should cover any loss which the business could not otherwise stand. Determine the present replacement value of your property, equipment and stock, then check your policies to see exactly what you can collect in event of loss. While most fire policies are pretty well standardized, there are differences from state to state, and you should know exactly how you are protected.

Smoke

Smoke can cause more destruction than flames. The owner of a variety store discovered this recently when fire ignited a large supply of paint stored in the basement . . . resulting in smoke damage of several thousand dollars to stock and property. Actual fire loss was only a few hundred dollars. The basic fire policy covers damage by smoke during a fire. Where smoke damage may occur without fire loss, as from a "blow-out" of a faulty oil burner, separate coverage is required.

Windstorms and hail are another ever-present threat. Last year's violent hurricanes dealt crippling blows to thousands of businesses. Hurricane Hazel alone cost America's insurance companies more than $75,000,000.

(Continued on page 16)

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

We read the headlines and maybe we don't sleep as well as we should, because of the "A" or "H" bomb, and what they may or could do for our world. It is something to think about, and we feel pretty helpless. Maybe it is a good thing for us to feel helpless now and then, that is, if it will make us think.

We would be just about as bad off (or maybe worse) if we didn't have phosphorus, potash, nitrogen and calcium to apply to our soils. Why? Well, we just wouldn't have anything to eat . . . and that makes us wonder if the folks in the large cities ever worry about plant food getting short?

Did you ever think about just how much plant food goes to town, tucked away in all the cereals, vegetables, milk, meat and what have you, never to return to the land where all the millions of tons of food were produced? It never comes back after its first visit to the city.

Did you ever stop to think, "how much plant food the farmer has to swap to get the necessary things he needs out on the farm?" You know: the farmer is akin to nature. Nature produces all it can, whether wet or dry and the farmer produces all he can, whether low or high.

Farm help is getting scarcer and scarcer and it will soon be so many farmers cannot plant, till and harvest as many acres as they have been, so good dealers, and county agents should contact as many real "pencil pushing farmers" as possible and see to it that they use the correct amounts of nutrients under all row crops, as well as their grains and pastures. The farmers' best buy at this time is plant food.

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

The Oct. 1-April 1 control campaign against the Dutch elm disease in New England is at its height. Of interest to farm chemical dealers is the advice of various agencies to make sanitation and spraying measures the big weapons against the disease.

The University of Massachusetts agricultural experiment station at Amherst has detailed suggestions available for taking specimens from trees suspected of having the disease. Dealers will find these suggestions helpful in urging their customers who own elms likely to be infected to secure a quick diagnosis and prompt treatment. The disease can be halted, such as was done at Alford and Williamstown, but some experts feel that it may never be eradicated.

- **University of Massachusetts authorities urge elm owners to keep their trees as healthy as possible by appropriate use of fertilizer and water according to local needs.**

Instructions are to burn dead elm trees, logs and branches that died from any cause, not just Dutch elm disease, since the previous May, especially within 500 ft., preferably 1,000 ft. of elms to be protected. Elm bark beetles breed in the bark of all such material and the object is to destroy the bark before these beetles finish breeding in it. Destruction afterwards is useless. Bark beetles may carry the Dutch elm disease fungus into any dead bark when they enter it to lay eggs. The young beetles reared there may later carry the fungus into healthy elms, especially those nearby, when they feed on living twigs, university entomologists say.

DDT Spray Helpful

DDT applications greatly reduced subsequent twig feedings and new infections by the Dutch elm disease fungus in experimental tests, it was reported at the university laboratory. An unusually high concentration of DDT emulsion spray is required in hydraulic sprayers and an unusually large volume of 12% DDT emulsion spray must be applied per tree by mist blower.

A practical year round plan, in which everyone can help, has been set up by the University of Massachusetts' Shade Tree Laboratories as follows:

1. From Oct. 1 to April 1, cut and burn all dead elm trees and elm

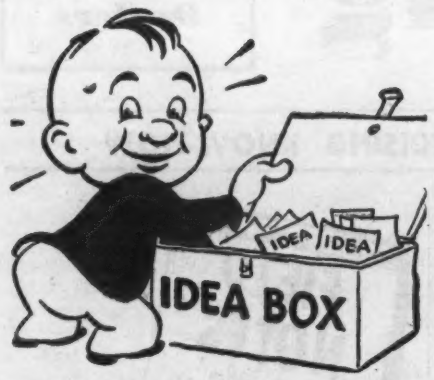
(Continued on page 12)

Vermont Sets Up New Seed & Soil Labs

BURLINGTON, VT.—New laboratory facilities have been set up at the University of Vermont to streamline and further improve the regulatory service work in soil and seed testing. Robert T. Wetherbee, chemist in charge of the regulatory service, said the changes were in effect Jan. 1.

The soil testing laboratory, formerly in the Hills Science Bldg., is being set up in conjunction with other testing facilities in Morrill Hall.

Farmers and seed dealers wishing to have soil or seed tested have to mail their requests. Containers, forms and instructions for taking proper soil samples are available from county agricultural agents. After taking the sample, these containers and forms should be mailed to Regulatory Service, Morrill Hall, Burlington, Vermont, Attention: R. T. Wetherbee.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6364—Catalog on Process Plants

Design, engineering, construction and initial operation of process industries plants by the Chemical Plants Division of Blaw-Knox Co. are outlined in a new catalog, entitled "Process Plants by Blaw-Knox." Illustrated with photographs of major projects, the brochure is designed to provide information on the diversity and scope of work undertaken and completed in the process industries field.

Subject matter of the 20-page publication covers the following industries: Fertilizers and pesticides; general industrial chemicals; fine chemicals and pharmaceuticals; petroleum and petrochemicals; plant rehabilitation and modernization, and others. Copies of the catalog, Bulletin No. 2514, are available upon request. Check No. 6364 on the coupon and a copy will be mailed to you.

No. 6367—Movie

A 16 mm. sound and color movie has been produced by the Mackwin Co. to document the company's three years of research on its DDT granular product for controlling the European corn borer. The product is called by the trade name, Mackodee Granules G-20. The movie is available in a limited number and reservations for showing dates are now being accepted by the manufacturer. Secure more complete information about the movie by checking No. 6367 on the coupon and dropping it in the mail to Croplife.

No. 6368—Coated Containers

A new bulletin describing how insecticides and other hard-to-handle products which are detrimental to steel containers can be packaged and shipped in standard size steel pails and drums is available without charge. The bulletin has been prepared by Bennett Industries, Inc. According to the company announcement, "Special protective coatings or linings are economically fabricated into the containers as they are manufactured." The statement continues that the company "offers a wide variety of the new lined steel containers called 'Hi-Bake' pails and drums which have phenolic, epon and vinyl resin linings to hold many products that previously caused trouble when shipped in steel." Secure the bulletin by checking No. 6368 on the coupon and mailing it to Croplife.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6362—Soil Moisture Indicator

The T. W. Prosser Co. is marketing a soil moisture indicator, called by the trade name, Irrometer. It is claimed to automatically evaluate the many varying soil and climate factors and register available soil moisture continuously on an easy-to-read gauge. The instrument consists of a hollow porous cup attached to an air-tight, water-filled plastic tube and a vacuum gauge. As the soil dries, moisture is extracted from the porous cup into the soil, causing a suction force (tension) to develop within the Irrometer which registers on the gauge. After irrigation the reverse action takes place. Secure more complete details by checking No. 6362 on the coupon and mailing it to Croplife.

No. 6363—Formulators' Booklet

McLaughlin Gormley King Co., Inc., has prepared a booklet on the firm's product, Dry Pyrocide, a pyrethrum concentrate. The booklet is entitled Non Toxic and Low Residue Agricultural Insecticide Concentrates and is available at no charge to agricultural insecticide formulators. The booklet states that dusts made from the firm's product are safe to use right up to the time of harvest. Information in the booklet includes sections on storage and handling Dry Pyrocide, diluents or carriers, compatible insecticides or fungicides, mixing machinery, packing and storage of the product, labeling, registration, strengths and dosages and commercial applications. Information for manufacturers on the firm's product, P-M Dust Concentrate, is also included. Formulators may check No. 6363 on the coupon and mail it to secure the booklet.

No. 5369—Seed Treater

A new automatic 150 bu.-per-hour liquid seed treater has been announced by Panogen, Inc. Smallest of the Panogen treaters, the new model JS-100 is said to offer the same "push button operation" and other features formerly available only in the firm's larger-capacity models. The electric motor, wire cord and plug are standard equipment. For non-stop treating of wheat, oats, barley, flax, rye and similar seed, the liquid seed disinfectant can be delivered by connection hoses directly from the shipping container. Since the pump will deliver the liquid up to a 50-ft. height it is even possible to keep the drum outside (the liquid doesn't freeze) or in a remote part of the building, it is claimed. The liquid may also be supplied from the drum by gravity or from an inverted bottle fitted to the top of the treater. Secure more complete details by checking No. 5369 on the coupon and mailing it to the publication.

No. 6361—Soil Drench

A new product for the control of damping-off is being marketed by Panogen, Inc., an affiliate of the Morton Salt Co. The new product is a liquid chemical soil drench called Pano-drench, developed as a means for controlling damping-off and other soil-dwelling fungus diseases. The product is used in a dilution of one teaspoonful to 3 gal. water and is applied to the soil before planting by drenching the flat or flower pot thoroughly. Since no drying or leaching is necessary, seeding can begin within 24 hours after treatment of soil, the company states. The product is available in 1 oz., 4 oz., and 16 oz. bottles. One 4 oz. bottle makes 7 gal. of drench and treats approximately 150 to 200 flats of 2½ sq. ft. size, it is claimed. Secure more complete details by checking No. 6361 on the coupon and mailing it to Croplife.

No. 6359—Fertilizer Mixer

Plant Foods, Inc., has announced its Chief mixing and blending unit for manufacturing of mixed fertilizers. The mixing unit is complete with push button control and incorporates many special features for economical plant installation and operation, the company claims. Production of the blender is being handled in cooperation with the Henderson Manufacturing Co., which also manufactures spreader bodies, bulk transport trucks and other allied equipment. Secure more complete details by checking No. 6359 on the coupon and mailing it to Croplife.

No. 6356—Corn Borer Bulletin

The Mackwin Co. has issued a folder entitled, "More Effective Corn Borer Control — Mackodee Granules G-20." The folder describes the firm's granular DDT product. Sections are devoted to what customers have to say about the product, the development of field tests which were begun in 1953 and the diluent and DDT level of the product. The folder adds that Mackwin product was "the only granular DDT used on large scale commercial acreage during 1955." The folder and other information may be secured by checking No. 6356 on the coupon and mailing it to Croplife.

No. 5360—Feeder

The Omega Machine Co., division of B-I-F Industries, Inc., is manufacturing the Hi-Weigh, model 3, belt gravimetric feeder for continuously feeding dry materials at medium to high rates. This feeder, with a feature called Sens-A-Gram, has a super-sensitive controller which maintains accuracies well within + or

Send me information on the items marked:

- ☐ No. 5309—Accounts Receivable
- ☐ No. 5360—Feeder
- ☐ No. 5369—Seed Treater
- ☐ No. 6356—Corn Borer Bulletin
- ☐ No. 6357—Pulverizer Bulletin
- ☐ No. 6358—Bag Filling Machine
- ☐ No. 6359—Fertilizer Mixture
- ☐ No. 6360—Catalog
- ☐ No. 6361—Soil Drench
- ☐ No. 6362—Moisture Indicator
- ☐ No. 6363—Formulators' Booklet
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%, it is claimed. It offers built-in 00-1 variable speed transmission and single power source with no auxiliary drives. Being introduced is a new line of gravimetric feeders of the loss-in-weight type for feeding a wide range of liquids and solids. Simplex and Duplex models are available in several sizes for feed rates from lb./hr. to 60,000 lb./hr. Equipped with a "built-in memory," the feeder, with an accuracy of + or — ½% by weight, is available with totalizer, indicator or recorder, the company states. Check No. 5360 on the coupon and mail it to secure more complete details.

No. 6358—Bag Filling Machine

A new brochure on Kraft Bag Corporation's automatic open mouth bag filling machine, called by the trade name, Kraftpacker, has been prepared. The brochure is entitled, "What You Want to Know About the Kraft Bag Corp. Automatic Open Mouth Bag Filling Machine." Two pages of the brochure are devoted to a question and answer method of presenting information. The brochure states that the unit will handle all weights from 25 lb. to 200 lb. The back page is devoted to a diagram and text explaining how the machine works. Secure the brochure by checking No. 6358 on the coupon and mailing it to this publication.

No. 6357—Pulverizer Bulletin

The Pulva Corp. announces the availability of a new condensed bulletin No. 5510 describing the firm's line of high speed pulverizers. The firm's product, called by the trade name, Pulva-Sizer, is available in five sizes ranging from ¾ h.p. to 75 h.p. The bulletin states that there is a "size and type to meet your requirements . . . for fine grinding, blending and dispersing, granulating, wet milling or close particle size control." A partial list of companies who are users of Pulva equipment is included. Secure the brochure by checking No. 6357 on the coupon and mailing it to Croplife.

No. 6360—Catalog

The new equipment catalog of Schelm Brothers, Inc., has been published and is now available. Schelm manufactures nitrogen equipment. There is no obligation in securing the catalog. Check No. 6360 on the coupon and mail it to Croplife.

No. 5309—Accounts Receivable

"Simplified accounts receivable for retailers" (SARR) is described in an 8-page folder released by Remington Rand. Based on the company's "simplified unit invoice accounting plan" (SUIAP), "simplified accounts receivable for retailers" uses no accounting machines and requires no highly trained clerks. It is claimed to provide a complete, accurate and fast method of handling accounts receivable. The method uses Remington Rand's Kolect-A-Matic trays, housed in Safe-Ledger equipment for 24-hour protection from fire, and provides an accounts receivable ledger composed of open, unpaid items only, a monthly statement for each customer, and a history of each account. Secure literature on this method by checking No. 5309 on the coupon and mailing it.

COUNCIL APPOINTMENT

WASHINGTON — Robert F. Ledbetter has been appointed assistant to J. Banks Young, Washington representative of the National Cotton Council, effective Jan. 1, 1956.

Something New Added To Beat of Fertilizer Sampling Agent

NEW HAVEN, CONN. — Virgil Churchill, who traveled the by-ways of Connecticut 44 years by bicycle, street car, horse and buggy, Model T Ford, and other conveyance, could hardly have anticipated that his successor would be taking samples from an oil truck.

Mr. Churchill was the sampling agent of the Connecticut Agricultural Experiment Station from 1897 to 1941, following the feed-store and fertilizer-dealer beat to bring in samples of the materials sold in these lines.

His successor, R. Richard Nichols, follows the beat today, encountering unofficially such specifics as African violet plant food, and officially the new product of liquid fertilizer, sprayed on lawns from an oil truck.

Since the containers for this liquid fertilizer exceed the 10-lb. maximum exempt from state registration, it is up to Mr. Nichols to bring in samples, and he does.

He took samples from 19 of these oil-truck fertilizer spreaders in 1955, representing the products of six different manufacturers.

Harry J. Fisher, chief chemist at the station, set forth last March the inspection agency's interpretation of Connecticut fertilizer laws as they apply to this new method of selling fertilizer.

Among other specifications, he said that the dealer must bill his customer for the quantity of undiluted fertilizer applied to the lawn, and follow this billing with a statement giving the number of gallons of water in which this fertilizer was dissolved. The station inspector may sample the diluted fertilizer to see whether the customer is getting the stated amount of plant food.

Soybean Experts to Speak at Delaware Farm & Home Week

NEWARK, DEL.—A soybean specialist from Virginia, and one from Indiana will be among the featured speakers on the soybean growers program at Farm and Home Week, scheduled for Feb. 7-9 at the University of Delaware College of Agriculture.

The Virginia man is Dr. W. E. Chappell, plant physiologist at the Virginia Agricultural Experiment Station. He will tell about his experiments with chemical control of weeds in soybeans, particularly the use of chemical sprays to control weeds early in the season before the soybean plants emerge above ground.

The Indiana speaker on soybeans is Dr. Werner Nelson of the American Potash Institute in Lafayette, Ind. His job will be to tell about North Carolina lime and fertilizer tests on soybeans which he superintended.

Among Farm and Home Week sessions of particular interest to vegetable growers will be a panel of experts from three states on pest control. They will discuss residue tolerances permitted under the Miller Amendment.

VEGETABLE SPECIALIST

NEW BRUNSWICK, N.J. — W. Bradford Johnson will become associate extension specialist in vegetable growing at Rutgers University Feb. 1, according to Lindley G. Cook, associate director of the Extension Service. A native of Philadelphia, Mr. Johnson is now an instructor in vegetable culture at the University of Massachusetts.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Both production and consumption of nitrogen on a world scale are continuing to maintain an upward trend. During 1954-55, production increased by 14% compared with the previous fiscal year, and consumption went up 13%. World inventories of the material were reported to have increased over those of last year.

International Minerals & Chemical Corp., Chicago, announced that it would double the production capacity of its Bonnie plant near Bartow, Fla., for the production of triple superphosphate and feed grade dicalcium phosphate. . . . Grover L. Bridger, Davison Chemical Corp. Division of W. R. Grace & Co., was named chairman of the Division of Fertilizer and Soil Chemistry, of the American Chemical Society.

W. B. Ennis, Jr., U.S. Department of Agriculture, Mississippi State College, was named president of the Weed Society of America at the group's charter meeting in New York. He succeeds Robert H. Beatty, American Chemical Paint Co., Ambler, Pa. . . . Harold S. Kendall, 62, assistant to the president of Dow Chemical Co., died at Midland, Mich., Jan. 8. . . . E. T. York assumed managership of the Northeast territory for the American Potash Institute, to succeed S. D. Gray who retired after holding this position since the API was formed in 1935.

The value of soil-testing was emphasized by speakers at the annual Texas Fertilizer Conference held at College Station. Representatives of the manufacturing industry and the Texas experiment station appeared on the program.

President Eisenhower, in his state of the union message to Congress on Jan. 5, said he would recommend a soil bank to handle the problem of diverted acres and to correct the overexpanded agricultural plant of the country. . . . Olin Mathieson Chemical Corp. combined its eastern and western divisions under the direction of Sam L. Nevins, vice president of the corporation. Edward Block was made executive vice president with responsibility for the operation of the phosphate chemical and plant food divisions.

The charter meeting of the Weed Society of America was held in New York Jan. 4-5, with more than 400 registered for the opening sessions. Robert H. Beatty, American Chemical Paint Co., Ambler, Pa., is first president of the national group.

Despite decreased numbers of corn borers in a number of the corn-producing states, the U.S. Department of Agriculture predicted that Iowa, Illinois, Maryland and other areas may face larger populations of the borer in 1956. This statement was made following an extensive survey conducted by the Agricultural Research Service of USDA.

Rice acreages were reduced to 1,639,984 acres by the U.S. Department of Agriculture. This 1956 allotment is smaller than that of last year by 288,350 acres. . . . J. Newton Hall was named western manager of the Insecticides division of Olin Mathieson Chemical Corp. His headquarters will be in Denver, Colo.

The Ohio Pesticide Institute held its annual meeting at Wooster, with good attendance from all parts of the state and surrounding areas. . . . W. L. Popham was named director of crops regulatory programs for the Agricultural Research Service, to succeed Avery S. Hoyt, former chief of the old Bureau of Entomology and Plant Quarantine of USDA.

In its preliminary report on fertilizer use in the U.S. and territories, the U.S. Department of Agriculture said that consumption of fertilizer, tonnage-wise, was down 1.3% from the 1953-54 figure, but that the estimated quantity of primary plant nutrients was up 151,000 tons, or 2.6% over the previous fiscal year. Consumption of primary plant nutrients for 1954-55 was 6,047,000 tons. Total tonnage for all fertilizers was estimated to be 22,468,000 tons.

The American Phytopathological Society discussed new methods for control of various plant diseases at its 47th annual meeting at Atlanta, Ga. Reports indicated that antibiotic treatments were effective in control of downy mildew of lima beans, late blight of tomatoes, and bacterial leaf spot of sesame. Dr. Helen Hart, University of Minnesota, became president of the national group.

Sulfur output hit a new record of 6,900,000 long tons in 1955, according to an estimate by Freeport Sulphur Co., New York. This figure represents an increase of 250,000 tons over the total output of 1954.

Use of superphosphate on wheat fields in Kansas was reported to have brought about unusual yields, according to information from speakers at the 1955 soil fertility conference held at Kansas State College. Best wheat yield in a test plot was 58.7 bu. where 25 lb. potassium an acre had been applied.

W. J. F. Francis was named vice president in charge of sales for American Potash & Chemical Corp. He will continue to make his headquarters at Los Angeles, Cal. . . . John O. J. Shellenberger was appointed director of marketing for the American Chemical Paint Co., Ambler, Pa. . . . James Wirwille was appointed to the sales staff of Velsicol Chemical Corp. to represent the company in a number of eastern states.

The Ozark-Mahoning Co., Tulsa, Okla., announced plans to build an ammonium phosphate plant at Tulsa. The plant will cost more than a million dollars. About 500,000 tons a year of high analysis water soluble complex fertilizers will be produced by the new facility.

An entomological team of USDA and Iowa State College men described their methods of controlling corn borer with granular insecticides, at a meeting at Ames, Iowa, Dec. 9. They reported that the granular method of borer control has now been added to the list of recommended control measures in the 14 states of the north-central region.

Oscar Schoenfeld had been sick with the flu for a week, and when he came down to the office the first day following his recovery, he sniffed as he smelled the odor of fresh coffee.

"Giving away something again?" he asked critically, sighting two coffee urns which stood on a display unit near the wall. In front of the spot was a table with some chairs.

"Now, Oscar," smiled Pat McGillicuddy, "just take it easy. We are not giving anything away. This coffee idea is bringing us in some fertilizer business. Here, have a good cup of Java, sit back and relax, and just watch. For one day, Oscar — your first day back — let's not have any arguments."

"I hate to look at all the bills, all the missed discounts and everything," intoned Oscar miserably, blowing his nose.

"Oh, Tillie handled everything very well when you were ill," Pat declared. "I'm sure she watched the discounts. And she even scolded me about the delinquent accounts and made me go out and try to collect them."

With astonishment Oscar looked at Tillie. "So somebody is listening to what I say around here, eh? So somebody knows we should cut costs and not spend foolishly, and—"

"No arguments today, Oscar," prompted Pat patiently. "Drink your coffee."

Oscar carefully placed an old newspaper on his clean desk, put down the cup of coffee Pat had given to him and dumped a couple of sugar lumps into the black liquid. It was piping hot and he blew on it before tasting it.

At this moment, chunky Bill Richardson came in, his face red with cold, his earlaps pulled down. "Gosh," he said, "I can't take this cold weather any more. Guess I'm gettin' old or somethin'."

"Here, have a cup of coffee, Bill," Pat said, "that will warm you up and make you feel better." He handed the farmer a cup of coffee from the urn to the left.

Richardson's eyes brightened and his nostrils sniffed. Then he lifted the cup to his lips and sipped a little of the liquid. A puzzled, disappointed expression crossed his face. Then he took another sip. Again he looked puzzled.

Finally he put the cup down.

"What's the matter, don't you like my coffee?" asked Pat anxiously.

The farmer hesitated. "Well, Pat, I have been tellin' my wife for years that her mother makes the worst tastin' coffee in the world, but I'm gonna apologize to her. Yours is worse by far."

Pat looked aggrieved, then he reached down and brought forth a sign and held it where Bill Richardson could see it. Copy on the sign said in part:

"Sure this coffee is weak. It doesn't satisfy customers because there is too little stuff in it. Just a little fertilizer on corn land, too, doesn't satisfy the hungry land and the big cornstalks that are going to grow there next summer. Give us your order for fertilizer today and get an extra per cent discount. Order enough and don't starve that corn."

"Well, I'll be darned," said Bill Richardson. "I might have knowed you were pulling somethin' like this, Pat. How many other fellers you pulled this on?"

"Oh, quite a few yesterday," Pat grinned. "It's one way to call farmers' attention to the fact that most of them don't use enough fertilizer per acre to get bumper corn crops. Now have a cup of real coffee." He filled another cup from the right urn and handed the cup to Bill.

The farmer tasted it and a smile broke across his face. "Man! This is good stuff, Pat. You sure didn't skimp on coffee in this batch."

Suddenly he whispered. "Hey, here comes Hank Amundson. He'd walk two miles to get a free cup of coffee, that Scandinavian."

Lanky, grinning Amundson sauntered up. He had spotted the coffee urns. "By golly, ve get some free coffee today, aye bet," he said. "Make mine straight, Pat."

Pat McGillicuddy filled a cup from the coffee urn on the left, and handed it to Amundson. The big Swede put in sugar and cream and then took a big drink.

A look of agony spread across his face. He looked for a place to spit the drink, could see none, then swallowed it. He shook his head sadly. "Pat, what the heck is this anyvay, coffee or veed killer? Or is business so bad you have to make the coffee so darn tin?"

"I think this the best coffee I've had since I went to the World's Fair," grinned Bill Richardson. "Could I have another cup, Pat? I can hardly wait."

"Sure, sure!" answered Pat. He gave Richardson another cup of coffee from the urn containing the good liquid.

The farmer took a couple of quick gulps, smacked his lips and smiled. Hank Amundson looked at his own cup of coffee, made a move as though to try to taste it again, decided against it and pushed the cup away.

This was the signal for Pat to bring out the lettered card again, telling about the relationship between weak coffee and piddling amounts of fertilizer on corn land.

Hank Amundson stared at the sign, then at Pat and began to laugh until tears came into his blue eyes. "By golly, that ban a gude one all right. Aye never ban surprised at anything in this yoint, Richardson. Aye vouldn't be surprised if aye cume in some day and find a coupla hootchie kootchie girls yumpin' around, you know."

Bill Richardson finally stopped laughing. "You and me are too old to be thinkin' about things like that, Henry. We jest better calm down and use more fertilizer on our land, raise more corn and get more profit."

"No sir," said Amundson. "Aye vill not buy any fertilizer from a feller who treats me vit such bum coffee like Pat. Aye thought he vas my friend, and now—"

"Give him a cup from the other urn, Pat, the one with the good coffee."

Again Hank Amundson's eyes popped wide, as he saw Pat get coffee from another urn. Pat grinned and handed the second cup to Amundson. "It's the real stuff, Hank, just as the right amount of high analysis fertilizer on your corn land will give you bumper corn crops instead of average crops."

"Holy smokes," grinned Richardson, now on his third cup of coffee. "Ain't Pat the salesman, Hank?"

Hank Amundson said nothing, but warily sipped his coffee, like a dog approaching a strange bone. A smile crept over his face, and he tasted the coffee again, then took a big gulp and swallowed it.

"If you don't lie about havin' gude coffee in that urn," Hank said, pointing at the right urn, "maybe aye can believe what you say about fertilizer. This coffee satisfies. Aye might try some more fertilizer in spring. It bane kind of fun to buy this vay."

OVER THE COUNTER

(Continued from page 9)

branches which have died since the previous May.

2. Follow latest spray schedule for control of elm bark beetle carriers of the Dutch elm disease fungus.

3. From late April to early June apply elm spray as needed to control insect and fungus pests that attack leaves, especially the elm leaf beetle.

4. Participate in systematic scouting for Dutch elm disease especially during July.

5. During summer months remove and burn diseased and dead elm material promptly before bark beetles have opportunity to breed.

6. As a substitute for (5), if bark is removed and burned from dead elms, control of bark beetles may be aided, provided removal of bark is thorough.

7. If dead or dying elms, or cut elm wood, discovered during summer cannot be burned or debarked immediately, the bark may be sprayed as the least desirable alternative in control. Latest information on sprays should be followed.

Monsanto Plant Superintendent Named

ST. LOUIS—The appointment of Charles J. Smith of Nitro, W.Va., as general manufacturing superintendent at Monsanto Chemical Co.'s John F. Queeny plant here, has been announced by Howard L. Minckler, plant manager. Mr. Smith, who has been production superintendent at the company's Nitro plant, will be succeeded by Charles Luecke of St. Louis who has been an operating superintendent at the Queeny plant.

Bright Outlook Seen For Agriculture In Massachusetts

BOSTON — The farm picture in Massachusetts, although a paradox, is seen as improving by agricultural leaders and a steady expansion of agriculture is predicted with marked increases in certain lines, such as turkey raising.

While Massachusetts is a highly industrialized state, agriculture is important and prosperous despite rough, small and stony fields and high labor costs with basic items such as grain, being shipped in from hundreds of miles away at considerable expense.

The outlook for 1956 is reported as "improving" by agricultural economists here. They point out that in 1944, according to the federal farm census figures, the gross product of Massachusetts' farms was worth $114,838,916. By 1949, it had jumped to $135,349,945.

Today, according to Roy Hawes, state agriculture commissioner, farm production is running at $200,000,000 a year rate in Massachusetts. He revealed that 50 years ago and even 30 years ago, the farm outlook in the state was one of frank pessimism. Today, it is bright.

Efficiency is the watchword of New England agriculture because of the natural disadvantages of location and terrain and farmers in the six-state area are said to be superior farmers. They have battled hurricanes, floods and insect pest infiltrations in the past few years and many farms have gone under during that period.

However, Mr. Hawes pointed out that many of the farms that went out of business were inefficient, located on marginal land, and did not produce a proper livelihood for their operators. The total farm picture is improved by the elimination of such farms, he indicated.

Vermont Extension Workers Review Year's Activities

BURLINGTON, VT. — Extension Service workers from Vermont's 14 counties and specialists on the University of Vermont staff met Dec. 5 for their annual conference on the College of Agriculture campus here.

Robert P. Davison, associate director of the extension service, opened the 3-day meeting by wishing the 75 conference members welcome and introducing new members and specialists on the extension staff.

Featured speakers for the afternoon were Donald M. Tobin, assistant managing director of the Vermont Development Commission and Frederick E. Gould, president of the Greater Burlington Industrial Commission.

"Vermont has endless possibilities of recreation features and attractions," said Tobin, speaking on "Vermont in Its Future."

The eighth annual Green Pastures program underlined the value of a balanced farm program to go with the improved roughage. Importance of good cows and better farm management for efficient production making full use of available resources played a major role in the program.

Other work stressed included: information and advice on combatting insect pests, vaccination in preventing poultry respiratory diseases, and increased farm and home counseling in some areas.

HEADS HORTICULTURAL GROUP

SALISBURY, MD. — James Richardson, Camden, Del., was elected president of the Peninsula Horticultural Society during the group's 69th annual meeting held here recently.

FARM SERVICE DATA
Extension Station Reports

Two types of virus which attack cabbage and reduce yields are carried by insects, according to observations at the New York Experiment Station at Geneva.

"One strain, known as virus A, is the turnip mosaic virus," explains Cornell plant disease specialist Dr. John J. Natti. "The other strain is known as virus B and is a cauliflower mosaic virus. Both are readily transmitted from infected to healthy plants in the field, but the viruses are not carried in the seed."

At the Experiment Station the trouble was first noticed in the greenhouse on "mother" plants in a cabbage breeding program, says Dr. Natti. Cabbage seedlings inoculated with juice from these leaves developed virus symptoms. When both viruses occur in the same plant, as often happens, the symptoms are more pronounced.

The viruses cause a marked loss in yield, observes Dr. Natti. Also, the earlier the infection occurs in the life of the plant, the greater the loss. Infected plants set in the field averaged four tons to the acre. Plants free from infection at planting time but which became infected several weeks later produced eight tons to the acre. Healthy plants or plants which became infected late in the season gave 16 tons to the acre. These observations were made in eleven varieties used in the station trials.

Aphids are the chief carriers of virus infection from diseased to healthy plants. Control of aphids and eradication of other plants which may harbor the viruses, such as wild mustard, yellow rocket, and other cruciferous weeds, from the vicinity of cabbage seedbeds are the most promising control measures now available.

★

Rhizoctonia, one of the two root-rotting fungi common on lilies in Connecticut, may be controlled by treatment of the growing plants with oxyquinoline sulfate solution.

Mrs. Frances W. Meyer, citing research conducted in the Department of Plant Pathology and Botany at the Connecticut Agricultural Experiment Station, says that treatment with oxyquinoline sulfate at the rate of 1 level teaspoon in 3 gallons of water (1:4000) "not only keeps the fungus in check but enables new roots to grow and the plant to resume normal development."

★

More intensified farming on fewer acres was predicted for New Jersey by William C. Lynn, assistant state secretary of agriculture, when he addressed the short course graduating class of Rutgers University's College of Agriculture.

"We are constantly losing acreage to industrial and residential expansion," Mr. Lynn pointed out. "In those areas of the state where this expansion continues, farmers will be faced with the dilemma of accepting a flattering price for their land, or continuing a way of life that is increasingly expensive." Mr. Lynn urged graduates to investigate new markets for their farm products.

★

Prevention is the only cure for peach leaf curl. This means spraying the trees while they are dormant, say fruit disease specialists at the New York Experiment Station at Geneva. Numerous complaints are received at the station every spring of outbreaks of leaf curl on peaches, especially from home owners with a few trees.

"But it's like locking the stable door after the horse is stolen to do anything about peach leaf curl after it appears," says the station scientists. "The remedy must be applied before the infection occurs and while the tree is dormant. For that reason, commercial peach growers spray their trees for leaf curl in late fall or very early spring while the trees are dormant."

★

Spraying infested white pine leaders with a concentrated spray has proved to be the cheapest and most effective method of controlling the white pine weevil, according to the Maine Agricultural Experiment Station.

The spray is applied anytime in late March or April, and it remains effective until early July. The entire leader and the terminal buds should be covered with a thick, concentrated spray of lead arsenate. If care is taken to treat every tree in the stand, the treatment will be almost 100% effective.

The first spray is applied when the trees are 3 to 5 ft. high. The second spray is applied when weeviling reaches 8 to 10% or when the trees are between 6 and 12 ft. in height. The two sprays should give a period of protection of from 7 to 10 years at the end of which the stand should be 16 ft. or more in height.

The insecticide is applied by means of a hand-operated knapsack sprayer. From 250 to 400 trees per hour can be treated and cost should average about $6 per 1,000 trees with labor at $1 per hour.

★

Nearly half of Maryland's land area is covered with commercial forests that contain about 6½ billion board feet of sawtimber, the U.S. Department of Agriculture has reported.

The report is based on a survey conducted by the Forest Service's Northeastern Forest Experiment Station headquartered in Upper Darby, Pa. Collaborating with the Forest Service in the survey were the Maryland Department of Forests and Parks, the Department of Research and Education, and the Game and Inland Fish Commission.

The survey showed that 2.3 billion board feet of Maryland's timber were oak, 2.7 billion board feet were other hardwoods, 1.1 billion board feet were loblolly pine, and one half billion board feet were other softwoods.

It also showed that only 16% of the commercial forest land has stands of sawtimber averaging more than 5,000 board feet per acre. About 31% has lightly stocked stands of 1,500 to 5,000 board feet of sawtimber per acre. The remaining 53% of the forest land has little or no sawtimber.

Wheat Pioneer Dies

COLLEGE STATION, TEXAS — Edgar S. McFadden, developer of the world's finest rust-resistant bread wheat, died here Jan. 5. He was 64 years of age, and had been connected with Texas A&M since 1935.

His "Hope" wheat was first developed in the back yard of a boarding house where he was staying while attending South Dakota Agricultural College. This strain of wheat is now grown throughout the world.

A short time ago he received the John Scott medal and an award of $1,000 for his work. About seven years ago a granite monument was set up at the site of his birthplace in Webster, S.D.

Books on Fertilizers And Their Use

MANUAL ON FERTILIZER MANUFACTURE—Second Edition

Vincent Sauchelli

A complete up-to-date revision of this well known book, that reviews in simple, everyday language the processes of manufacture of superphosphates, of ammoniation, and the formulation and preparation of mixed fertilizers. Indispensable to fertilizer plant supervisors and operators, and a valuable aid to research men and teachers. New chapters added: on plant nutrition, mixed fertilizers, ammoniation, granulation, revised and brought up-to-date. 80 tables of practical information..... $4.50

HUNGER SIGNS IN CROPS—Second Edition

A symposium — published jointly by the American Society of Agronomy and the National Fertilizer Association.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents, and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color.... $4.50

USING COMMERCIAL FERTILIZER (1952)

Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trade-element plant foods. 208 pages, 106 illustrations, cloth bound $3.00

THE CARE AND FEEDING OF GARDEN PLANTS

Published jointly by the American Society for Horticultural Science and the National Fertilizer Association.

An entirely new, one-of-a-kind book, it is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color $3.00

COMMERCIAL FERTILIZERS, Their Sources and Use—Fifth Edition (1955)

Gilbeart H. Collings

Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages.. $8.00

COMMERCIAL FERTILIZERS, the World Economy in War and Peace (Nov. 1955)

Mirko Lamer

A Stanford University Research Institute book. 640 pages, charts, index, references. Plant nutrients and the environment, classification of fertilizers, availability of nutrients, yield response, consumption in various countries and the production potential. International trade in fertilizers $10.00

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages $5.50

MANURES AND FERTILIZERS

A survey by the Ministry of Agriculture and Fisheries, dealing with soil analysis, inorganic fertilizers, waste organic substances and principles of manuring. In language to give the farmer basic principles of increasing soil fertility by the application of natural organic manures and synthetic inorganic fertilizers. Many important tables on quantitative data $2.50

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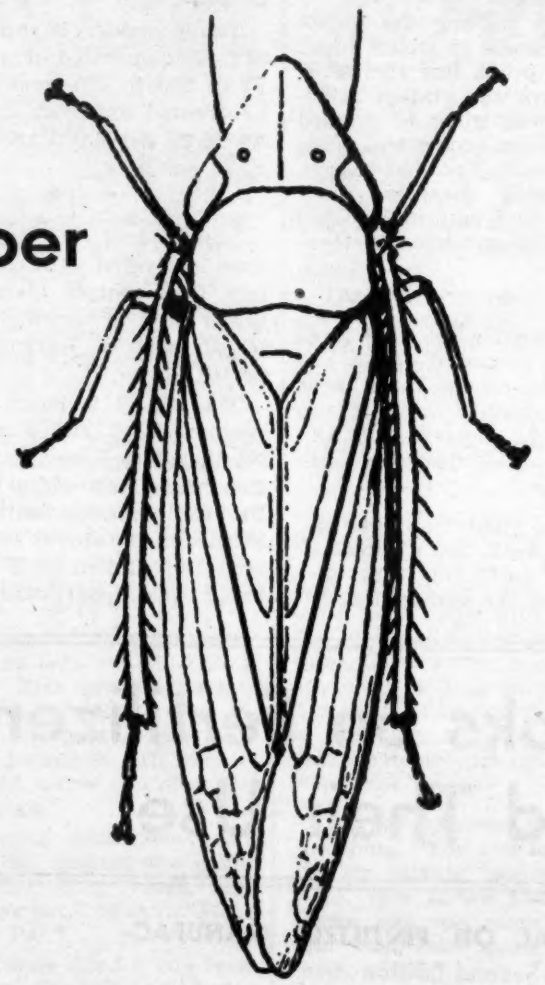
BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Leafhopper



How to Identify

Adult leafhoppers are rarely a half-inch in length, and often are a quarter-inch or smaller. As indicated by their name, they are good jumpers and leap from leaf to leaf and plant to plant. Although the adults possess wings, they use their legs most extensively. Color of these bugs is from brown to pale green. Their distribution is throughout the world.

Habits of Leafhoppers

Eggs are laid in the leaf tissue or stalks of plants and two or more broods may occur annually. As to winter hibernation, different species spend the cold months in various stages. Some over-winter in the egg stage within the stems of plants while some species hide away in sheltered places in field crops. Still others spend the winter as nymphs. In warmer climates, the female leafhoppers may continue to reproduce throughout the cooler months, enabling the winged form to move northward in the spring of the year.

Damage Done by Leafhoppers

Even in the nymphal stage, these insects do damage. By sucking the sap from plants and injecting a poisonous substance into the plant tissue, leafhopper nymphs damage the area surrounding the feeding puncture. Although these bugs attack nearly all plant life, they commonly do damage to asters, calendula, dahlia, gladiolus, hollyhock, marigold, roses and zinnias. Clover, alfalfa, small grains and grasses as well as orchards are also on the insect's list of vulnerable crops.

Control of Leafhoppers

Among various materials suggested for leafhopper control by the U.S. Department of Agriculture and other sources, are chlordane, methoxychlor, DDT, parathion, pyrethrum, nicotine sulfate and copper-containing compounds. For specific recommendations as to amounts to use and timing of applications, local agricultural authorities, such as the county agent, should be consulted.

Illustration of leafhopper furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

Best Way to Sell Fertilizer Is To Talk Dollars and Cents, Says Pennsylvania Retailer

Dan W. Hoover, East Earl, Pa., fertilizer dealer, believes in talking dollars and cents to customers.

"The best way to sell a farmer is to talk dollars-and-cents to him," he says. "They understand this above everything else. Telling them how good your fertilizer is may make an impression upon them, but it doesn't get them to buy. At least not in the quantities that we would like to sell it in.

"But when you can show them in dollars and cents how the fertilizer you are handling will give them heavier growth per acre and a better crop, you don't have to go any further in promoting a sale."

This Pennsylvania dealer never goes out to sell fertilizer cold. He visits his prospects, discusses the crops that they raised the previous year and inquires about the yield. Then he determines the crops that they intend raising the current year. After this initial discussion, he tells the farmer that he is interested in his raising a heavier and better crop the approaching season. He asks if he can make his own survey.

"This naturally raises the curiosity of every prospect I contact," says Mr. Hoover. "Every farmer wants to have a heavier and better crop the approaching season. When it doesn't cost them anything to have someone show them how it can be done, they not only tell the dealer to go ahead with it—but they also keep after him for his observations. And that is the basis for our heavy fertilizer sales program."

Mr. Hoover takes a sample of the soil and has it analyzed. When it is determined what is lacking, he knows the fertilizer that should be spread on it. Many times he has found, that by having the farmer switch the crops that he is planting on his land, a better yield can be had with less fertilizer cost. He works all this out on paper then makes a return visit to the farmer.

"We ask the farmer how much he made the previous year on each acre of ground for the particular crop," explains Mr. Hoover. "Then we tell him how much he can average per acre if he spreads our recommended fertilizer on the ground, and we tell him how much fertilizer he needs and about the approximate cost of spreading. The figures come out way ahead of his past years' averages."

While some farmers "see the light" immediately, others are still skeptical and want proof. This means that Mr. Hoover has to wait until the planting season starts. But he has patience, because he has found that patience is needed in order to build large volume repeat fertilizer business.

At the proper time, he provides the farmer with a stipulated quantity of fertilizer and tells him to use it on a certain plot of ground. There is no other obligation. When the fields begin to produce, that portion of the field with the fertilizer outshines the rest. The farmer knows the reason.

"There are many times when we will do the spreading ourselves," says Mr. Hoover. "We feel that the investment of our material and labor is well worth it when a sizeable order can be sold a customer with repeat business from that time on. And when the crops start coming up, we begin telephoning all the other farmers who we want as customers and ask them to take a look at the particular farmer's field."

Mr. Hoover feels that greater quantities of fertilizer can be sold even to the farmer who is already buying it. Many farmers stick to the same brand and mixture of fertilizer regardless of the crops that they are raising. As Lancaster County is known for its tobacco crops, tomatoes and beans, particular emphasis on these is made.

"Many farmers limit their fertilizer spread because they want to save money," says Mr. Hoover. "We show them that underspreading brings them limited results and that their original investment isn't worth while. Either they do the job right or not at all. Once we can educate the farmer to check his soil regularly, use the right fertilizer in just the proper quantities on his crops, we have made a steady customer. Because when he reaps extra profits from his field, he remembers us for the next season."

Mr. Hoover has contact with several public spreaders, and when a farmer hasn't the equipment to do it himself, a recommendation is made. This helps to keep the spreader contractor from trying to sell his own fertilizer to the farmer.

"Every time we visit a customer or a prospect, he tells us that he has already been called upon by other dealers and salesmen," says Mr. Hoover. "And through the years we have learned that the best way to overcome this competition is to make believe that we don't know that it exists. We go about our business in our way and don't worry about competition. If we did, we would have had to forget about the fertilizer business a long time ago."

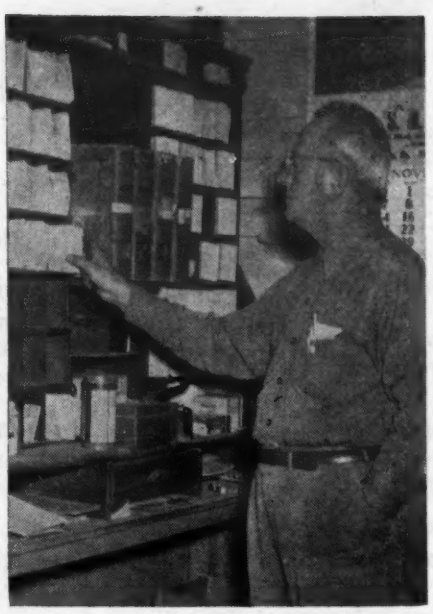
Mr. Hoover feels that the best way to sell the farmer is by first selling himself. Practically the same thing can be said for or against most types of fertilizers and farmers have formed this opinion after hearing the presentations of the different dealers and salesmen. So Mr. Hoover sells himself to the farmer by working on the premise that anyone will listen if you can show him how to make more money.

"Fertilizer is very competitive in Lancaster County and many farmers decide to buy from the cheapest source regardless of what you tell them," says Mr. Hoover. "But when you can meet competitive prices and still give them a better quality fertilizer, you have a combination that no one can beat."

In keeping his prices within competitive range, Mr. Hoover has made it a practice to examine his operations to find ways and means of reducing his overhead and cutting the cost to the farmer.

He trucks in his own fertilizer, calls many of his customers before the trucks are unloaded and makes drops at various locations. This saves time and labor in unloading in the warehouse then reloading for customer delivery. He may give large users a better-than-average-price by getting two or three to buy a complete carload at one time. The railroad car is sidetracked in the vicinity of the farmers and they make their own pick-ups.

"Transportation and handling is a decided factor when handling fertilizer in quantity, and farmers can be offered substantial savings if they do part of the work themselves," says Mr. Hoover. "As far as we are concerned, we make a higher profit margin because in some cases we never even see the fertilizer that we sell. It goes right to the farmer. And when we consider transportation, handling charges, warehousing and office details, we find ourselves ahead by quite a bit."



PENNSYLVAIA DEALER—Dan W. Hoover, East Earl, Pa., fertilizer dealer, stresses the economic benefits of plant food use in his sales program. Mr. Hoover, above, is shown inspecting accumulated sales slips, which are kept for a month before customers are billed.

★ ★ ★

Many years back, when Mr. Hoover first started in business for himself, he was primarily a feed dealer. In order to round out his services, he also took on a line of fertilizers.

"A soil test goes a long way in making the most of fertilizer use," says Mr. Hoover. "Yet it is seldom done by the farmer or by our competitive dealers. They are all so price conscious, that buying and selling seems to be entirely based on price. But farmers respect the opinion and suggestions of the 'educated soil man' and will listen. Particularly when it means greater income from their crops. So by talking dollars-and-cents to them, and showing it to them black-on-white, we have developed such a sizeable fertilizer business that we have to add additional help and trucks to handle this business in season."

Fertilizer Tonnage Dips in Connecticut

NEW HAVEN, CONN. — A total of 55,333 tons of commercial fertilizer was sold in Connecticut in the year ending June 30, 1955, in addition to 4,671 tons of special and home mixtures, according to tonnage reports received by the Connecticut Agricultural Experiment Station.

Limestone, materials distributed under the Federal Conservation Program, fertilizer in small packages, and other miscellaneous materials are not included in these totals.

Comparable figures for the year ending June 30, 1954, showed 62,398 tons of commercial fertilizer and 2,940 tons of special and home mixtures. Dr. Harry J. Fisher, chief chemist, says that the total number of fertilizer samples of all kinds analyzed by station chemists in 1955 was 871, compared with 842 in 1954 and 745 in 1953.

For 1955, 95 firms and individuals registered a total of 456 brands of fertilizer with the station for sale in Connecticut.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

False Notion

The notion that frost kills all insects is false, says Dr. William L. Brown, Jr., associate curator of insects at the Harvard Museum of Comparative Zoology in Cambridge, Mass. The insects hide in the winter and are ready to lay eggs in the spring.

"Frost doesn't kill all insects, it even makes the going a little easier for some of the insects and their relatives," he said.

He pointed out that house flies are essentially tropical insects that survive the winter by coming indoors. They hibernate in secluded cracks and crannies in cellars and attics. Almost all flies that live through the winter are fertilized females, ready to lay eggs the following spring.

The survival of the race through fertile females applies to many insects, Dr. Brown said, bumblebees, mosquitoes, wasps, are among them. The northern green-striped grasshopper in New England lives through the cold months as a nymph, he pointed out.

"The mass of insects does not winter as hibernating adults," he said. "They pull through the difficult months as eggs, like aphids and grubs, which later become Japanese beetles."

Town Forests

The town forest movement is gaining momentum in Massachusetts. There are now 129 Massachusetts towns with state forests. The town forest idea was promulgated by Harris Reynolds in 1913, who picked it up during his honeymoon in Europe. In 1914, the first town forest was established in Fitchburg, Mass., following Mr. Reynolds' return to Boston.

Some 39 other states have followed the Massachusetts example. Ten towns in Plymouth County have appointed committees to study ways and means of getting town forests.

Farm Training

Jamaica Plain's High School has an agriculture department which is giving city bred boys and girls a know how in agriculture. Last summer, 115 pupils, 98% of the agricultural department enrollees, earned approximately $36,000 in required summer placement jobs.

By state law they can't get credits in agriculture unless they have a minimum of 750 hours of outside practice. Vacations are spent working under progressive agriculturists.

Countless persons, even school teachers, have been surprised to learn that there is an agriculture department in the big Boston public school system.

John B. Casey, headmaster, said: "A great many farmers tell me they would rather have boys from Jamaica Plain High School than some of the boys from rural schools. The farmers welcome our boys. They are surprised at their know-how."

Jamaica Plain, with its 800 pupils, has 125 in the agriculture department. It accepts all who apply for that course. Also it takes pupils from cities in counties that are without agricultural schools.

"In a metropolitan area such as this," Mr. Casey said, "there are many opportunities for fine positions allied to agriculture. Feed, seed, machinery and fertilizer salesmen are examples. These all require some basic training in the fundamentals of agriculture and that is what we provide at Jamaica Plain High School."

U.S. Farm Census Reports on Fertilizer Use

Details of commercial fertilizer and lime use are included in the preliminary state and county reports of the 1954 Census of Agriculture, released recently by the Bureau of the Census, U.S. Department of Commerce.

In the table below are the figures on fertilizer and lime consumption, including use on specific crops, for the states in Croplife's Northeast dealer area, to which the special regional circulation of this issue goes.

A chart for the southern states appeared on page 9 of the Jan. 2 issue of Croplife, one for the midwestern states on page 16 of the Jan. 2 issue and one for the western states on page 9 of the Jan. 16 issue.

The Bureau of the Census points out that the figures in the preliminary reports are subject to revision. The production statistics are for the calendar year of 1954.

Similar statistical data from the 1954 census of agriculture is available for each of the 3,100 counties in the U.S. in the form of individual four-page leaflets. These county reports, along with the state reports, may be obtained from the Director, Bureau of the Census, Washington 25, D.C.

A charge of 10¢ is made for a single preliminary report, state or county. Charges for each of the complete state sets vary, depending upon the number of counties involved. A charge of $4[illegible] will be made for one complete U.S. set, including all counties and all states. A set of the 48 state reports may be obtained for $3.75. Payment should be included in the order.

In addition to the data on fertilizer and lime use, the preliminary reports include statistics on number of farms, farm characteristics, acreage in farms, value of land and buildings, uses of land, farm facilities and equipment, specified classes of livestock, specified crops harvested, and available comparative data from the 1950 census of agriculture.

	Connecticut	Delaware	Maine	Maryland	Mass.	N. Hampshire	New Jersey	New York	Pennsylvania	Rhode Island	Vermont	W. Virginia
COMMERCIAL FERTILIZER												
Dollars	4,331,691	3,907,116	10,238,765	12,845,985	3,447,241	899,637	11,856,011	27,639,526	31,418,667	326,261	2,203,296	3,218,052
Tons	66,829	75,144	170,166	264,808	58,273	17,972	238,115	516,685	610,462	5,788	45,688	67,858
Acres fertilized	151,331	316,787	247,471	1,195,743	165,064	69,501	612,074	2,278,272	3,204,407	15,831	211,636	366,737
LIME AND LIMING MATERIAL												
Tons	42,961	38,894	40,543	219,245	38,507	19,254	113,253	591,459	878,618	3,306	66,811	176,412
Dollars	347,859	309,107	240,370	1,850,979	285,182	102,617	1,036,581	3,797,767	5,048,744	31,336	312,889	627,395
Acres limed	39,859	48,761	55,835	230,877	33,769	16,676	125,920	398,289	649,069	3,222	57,543	102,090
CROP USE OF FERTILIZER												
Hay and cropland, pastured ....tons	16,947	5,009	11,259	32,260	19,228	9,509	26,854	47,982	68,726	1,794	26,162	17,836
acres	74,894	28,789	46,871	164,523	85,816	46,368	111,920	285,026	389,713	7,520	130,597	97,134
Other pastures ....tons	2,157	1,285	1,110	10,921	2,039	666	5,760	9,189	20,598	163	2,995	4,966
acres	9,084	8,336	3,940	51,110	9,020	3,179	26,091	53,803	117,475	1,115	16,560	29,420
Corn ....tons	7,291	29,728	3,800	87,186	6,782	2,326	47,784	110,776	202,265	1,358	8,996	20,602
acres	26,276	149,319	10,306	458,102	23,114	9,049	171,427	617,396	1,140,177	4,151	41,979	117,737
Tobacco ....tons	24,726				9,763						50	
acres	14,334				5,652						50	
Wheat ....tons		5,803		32,367			9,705	50,292	95,771			6,190
acres		29,695		171,479			46,289	297,482	576,589			37,177
Fruits, vegetables, potatoes, etc. ...tons	13,579	19,007	146,414	37,884	17,212	4,804	127,078	182,806	88,001	1,645	3,853	7,833
acres	23,001	36,769	155,053	87,035	31,914	8,767	183,982	347,657	194,547	2,625	8,463	37,278
Other crops ....tons	1,635	13,641	6,899	62,588	3,312	670	19,441	110,488	129,172	797	3,604	9,995
acres	4,411	64,796	32,094	268,521	10,269	2,133	72,672	677,497	788,033	525	13,974	50,527

BUSINESS PERILS

(Continued from page 9)

While tornadoes and other storms mark a constant threat to the small businessman's property, this hazard is frequently not covered by insurance. Less than 10% of the stores in Waco, Texas, were protected when the devastating tornado of 1953 tore its $50,000,000 trail through town. Since it is impossible to tell when or where a storm may strike, it is the wise business manager who insures against Dame Nature's unpredictable whims.

Explosions, equally violent and unpredictable, can cause a devastating loss. Safety experts point out that explosions often occur where least expected. A leaking gas main, half-empty cans of paint—even sawdust—can cause an explosion. Where boilers or other fired vessels are used, insurance against this hazard is paramount.

Riot from civil commotion or strikes can wreck a business in a matter of minutes. If this peril is increased by the nature or location of your business, adequate protection against damage, including attendant pillage and looting, is a "must." While less frequent than many perils, damage directly or indirectly caused by aircraft and vehicles can result in a wholesale loss. Stores or businesses located on main thoroughfares or within the traffic pattern of an airport are particularly subject to this form of destruction.

Extended Coverage

All of these hazards can now be insured by a single addition to the basic fire policy called an extended coverage endorsement. While any one also can be insured separately, cost of protecting against the entire group is nominal, and recommended by underwriters as a sound business investment.

Of the many other perils to buildings and contents, four are particularly noteworthy and can be covered by one endorsement called additional extended coverage. Destruction by vandals has been steadily on the increase since World War II. In one Midwest city, teen-age gangs destroyed so much property that an all-out community program had to be established to prevent these raids. Similar patterns of delinquency have been noted in large and small communities across the country. Most businesses, regardless of location or type, are open prey to this hazard and should be insured.

Water damage also can be extensive, even ruinous. During a heavy rainstorm recently, roof water entered a specialty shop through a hole in the down spout, causing extensive damage to the stock of women's clothing. Fortunately, the owner carried a special water damage policy and was paid in full for his $5,911 loss. Broken water mains, faulty plumbing systems, defective heating or air conditioning systems . . . all may cause heavy water damage to stock and equipment.

Hazards to Business Operations

While most businesses are insured against loss by fire and many of the "natural perils," operational hazards often are neglected. Business interruption after a loss, for example, could prove fatal. A special policy recently was made available for small businesses to cover any loss of earnings which may result during the time a business is out of operation. As your property insurance pays for the destruction of building's equipment and stock, the business interruption insurance pays for loss of income. It will reimburse for lost profit, and covers essential expenses such as salaries, taxes, advertising, and other items that would have been earned had not the business been crippled by fire or other hazard.

Even when continuing expenses are covered by insurance, however, certain businesses may suffer by not opening their doors as soon as possible after a loss. Service establishments in particular may feel that business continuity must be maintained. More often than not, this involves extra expense, and is covered by another special policy. Extra expense insurance will pay additional expenses while operating in temporary quarters due to damage to buildings or contents by fire or any other insured hazard. This not only covers the cost of rental of temporary quarters, but the purchase of any equipment essential to the continuity of the business. For those businesses which include income from rents, another policy insures that rent payments will be made by the insurance company if the property is made untenantable by fire or other damage. This protection can be added to your regular fire policy or can be obtained as a separate coverage.

Every businessman is exposed to the possibility of a claim for negligence. All an injured person has to do to get you into court is to allege that ordinary care has not been taken and that you were negligent to some degree. Even when innocent, settling these claims can be both troublesome and expensive.

Keep in mind that there is no exact definition of negligence, and that it is the jury—not the judge or the law— which ultimately decides whether negligence has or has not existed.

Liability

No phase of a business is immune from the possibility of a liability suit. To make certain that your business is properly protected, ask your insurance agent to review the various forms of liability coverage. Pick out those that apply particularly to your business, and make sure you are insured for an adequate amount. Keep in mind that a judgment is apt to be particularly large if the defendant is an established and prosperous business.

By all means, liability insurance should include a policy covering motor vehicle liability. All states now have financial responsibility laws which require the owner of an automobile to show evidence of his ability to pay for injury or damage to others caused by his negligence, or to lose the privilege of driving. Since most businesses would be seriously impaired without the use of an automobile, adequate protection here is essential. Liability insurance against this hazard covers bodily injury, property damage, and usually provides for medical payments in event of injury.

Burglary, theft, and robbery are another ever-present threat. The FBI recently surveyed 359 cities across the country and reported that over 1,100 places were looted daily in these communities. Almost one-third of the robberies were committed against some type of commercial establishment, and over half of the burglaries reported were to stores and offices.

Ask your agent about the various policies which will protect you from such loss. Underwriters generally recommend that small business include a special 3-D policy—protecting against dishonesty, disappearance and destruction. This combination policy consists of five broad coverages, all optional, to include loss through employee's dishonest act, loss of money and securities occurring within the premises, loss of money and securities outside the premises, loss of securities within leased safety deposit boxes, and loss through forgery of outgoing instruments.

Bad Debts

No business insurance program would be complete without some protection against bad debts. Credit losses can be just as large and just as serious as a loss from fire or other circumstance, and must be adequately controlled. Credit insurance guarantees that in the event of loss resulting from nonpayment of debt or extension of credit, the insurance company will make good this loss. While most businessmen may rely on their own reserves to absorb normal bad debt losses, this policy safeguards them from excessive loss—which may permanently disable the business.

If you're protected against these 20 perils, relax. Chances are you'll be able to weather just about everything that fate may throw your way. But if you've spotted a weak spot in your insurance program, correct it immediately before it's too late. Your insurance agent—who also is a small businessman — will recommend the best policies for your business. Listening to his advice will not cost a cent . . . and could save you from disastrous loss.

VIRUS-FREE STRAWBERRIES

Virus-free strawberries have yielded about four times as much fruit as virus-infected plants, according to findings at the New York Experiment Station at Geneva. "Our results demonstrate very definitely the desirability of planting only virus-free strawberry plants," say station plant disease specialists. Growers who are planning to draw on their own virus-free plantings for planting stock are advised to spray or dust their plant beds frequently to control aphids which carry the infection from plant to plant.

T WISCONSIN CONFERENCE—A panel of experts advises growers to fol-w instructions on pesticide labels and not to experiment. Scene is at 10th nual Insect Control Conference held Jan. 11-12 at Madison. Speaking is . T. Scott, director of the Wisconsin Alumni Research Foundation's biologi-l laboratory. Seated are J. F. Dunn, supervisor of food inspection, Wisconsin epartment of Agriculture; John Guill, chief inspector, Food and Drug Admin-tration, Minneapolis; C. C. Alexander, Geigy Chemical Corp., New York; . E. Casida, University of Wisconsin entomologist, and Marvin P. Verhulst, ecretary of the Wisconsin Canners Assn.

WISCONSIN MEETING

(Continued from page 1)

l laboratory, Wisconsin Alumni Re-earch Foundation; and John Guill, hief inspector, Food and Drug Ad-inistration, Minneapolis.

Most chemicals are safe to use on anning crops within certain toler-nces, Mr. Gill said, but so far toler-nces have not been set on all new ure; H. T. Scott, director of biologi-roducts. Mr. Dunn said: "It would e to the advantage of Wisconsin rowers to have tolerances set up long the same line as the federal vel." Most of these tolerances will robably be set up in a few months, e added.

Some of the chemical use recom-mendations aren't always realistic, Mr. Verhulst said. The law says here must be a 30-day interval be-ween applications of DDT and the ate of harvest when the crop is o be used as forage for dairy cat-le or meat animals, it was pointed ut. Mr. Verhulst added that the 0-day interval requirement means hat where there is a heavy second rood of corn borer and it is neces-ary to spray with DDT within bout two weeks of harvest, that ortion of the crop which is treated ould have to be segregated from he rest and disposed of by spread-ng it on fields and plowing it un-er. "That takes a lot of time and ork on the farmer's part," he aid.

He added that the 14-day interval equirement on parathion isn't realis-c, either. "It's generally known at parathion can be applied just a eek before harvest without any resi-ue problem," he said.

Dr. Alexander said 1956 is the criti-l year for use of pesticides under e Miller Bill. The responsibility for bmitting petitions for tolerances, e said, rests with the chemical pro-ucers.

He advised dairy and meat farmers gainst using any other insect con-ol procedure than the one approved the FDA. Toxic chemical residue milk could cost dairy farmers some their markets, he said.

Mr. Scott said that any recom-mendations or rulings on these roblems must be based on scien-ific tests, and called for continued esearch on chemical residues and oxicity.

That the Wisconsin experiment ation conducted some 20,000 residue alyses in the past two or three ars, was stated by Mr. Casida.

Insecticides put on during the grow-season may change the flavor of e vegetables after they're cooked, the change is not always un-irable, according to a report by J. Birdsall, food industries research ist, and R. K. Chapman, ento-logist at Wisconsin.

ree panel members, Mr. Birdsall, Chapman, and K. G. Weckel, Wisconsin food industries expert, tested the effect of seven different insecticides on vegetables commonly grown in Wisconsin and found that some flavor changes from chemicals were undesirable, but in other cases the insecticide seemed actually to improve the quality of the vegetable.

The research workers, aided by taste-panel workers, had tested for flavor changes in canned, raw, and cooked vegetables that received both foliage and soil treatments of aldrin, dieldrin, endrin, chlordane, heptachlor, lindane, and toxaphene.

The tests indicated that canned treated samples were somewhat lower in quality than cooked and raw treated vegetables. Certain vegetables —snap beans, tomatoes, carrots— seemed to be resistant to flavor changes by insecticides, while others —squash, pumpkin, beets, and rutabagas—were more susceptible.

Wisconsin entomologist J. W. Apple reported that granular insecticides have been found to be highly effective for first generation borer control, whether put on by ground machines or airplanes.

He said that in corn borer control tests conducted last summer near Fond du Lac, Wis., granulated DDT was superior to conventional ground sprays. Eleven spray experiments from 1950-52 had reduced first brood corn borers 71.8%. This was with sprays of one-and-one-half pounds DDT per acre.

The ground and airplane applications of granules—at a rate of one pound DDT per acre—gave an average control of 78%.

The number of corn borers in Wisconsin was up to 82 borers per hundred plants in 1955, compared to 28 per hundred the year before, according to a report by E. L. Chambers, state entomologist. He said the rate was probably headed back to the 1949 level when the state averaged 168 borers per hundred plants. Wisconsin farmers lost more than three million dollars from borer damage in 1955, Mr. Chambers added.

Kenneth Buchholtz, Wisconsin agronomist, said that effective quack grass control with dalapon is being reported. Dalapon applied at the rate of four to five pounds per acre on new quack growth in spring can control this grass, he said. He stated that farmers should wait a week before plowing it under because of residues that might injure corn.

J. F. Doane, research assistant at the University, reported on tests for phytotoxicity to cabbage when applied in the transplanting water at the recommended rate of two ounces per 50 gallons of water at 300 gallons an acre. University researchers also tested for damage at four times the recommended rate.

Mr. Doane said he and other research workers compared the effect of moisture and temperature on phytotoxicity and found that there was a greater decrease in wet than in dry seasons.

He also said there was more phytotoxicity damage to crops on lighter soils than on heavier soils.

L. W. Getzin, graduate assistant at the University, told the group there are many factors that affect insecticide residue in vegetables. He said these include soil type, moisture content, temperature, number of days of sunshine, type and maturity of crop, and type of insecticide application.

Mr. Getzin said he worked with cabbage, carrots, and potatoes in field and greenhouse experiments, testing the toxic effect on insects with systemic soil and foliage treatment and with contact phosphates on foliage. The plants were treated by soaking the seed in an insecticide solution, by direct application to the seed, and by mixing the materials with charcoal.

J. T. Medler, Wisconsin entomologist, said that insecticides can increase alfalfa seed and forage production. But he said that the break-even point on spraying and harvesting costs would be equal to the value of about 15 lb. seed an acre.

The entomologist reported that methoxychlor at one-half pound was satisfactory for controlling leafhoppers, and that it also reduced grasshoppers. Aldrin and heptachlor each mixed with methoxychlor, increased grasshopper kill.

Other conference speakers included E. P. Lichtenstein, G. J. Lugthart, R. J. Dicke, R. O. Marzke, J. D. Moore, and C. L. Fluke, University entomologists; Phil Smith, Wisconsin Dept. of Agriculture entomologist, and J. A. Beale, chief state forester, Wisconsin Conservation Department.

An Insect Control Industries Scholarship of $150 was presented to Walter S. Bigley, junior in entomology at the University, by V. E. Kivlin, associate dean of the College of Agriculture, at a Jan. 11 noon luncheon of the conference.

F. L. Wooten, Jr., Named Unit Sales Manager by Armour

ATLANTA — W. E. Shelburne, president of Armour Fertilizer Works, has announced that F. L. Wooten, Jr. has been transferred to the general office in Atlanta in the capacity of unit sales manager. Mr. Wooten was formerly manager of the firm's Wilmington, N.C., division.

Mr. Wooten began his career with Armour in the Wilmington office, later acted as assistant manager of the Houston, Texas, division, and returned to Wilmington as division manager three years ago. In his new capacity, he will supervise sales activities in most of the southeastern states.

Mr. Wooten is a graduate of North Carolina State College and served in the Armed Forces in World War II and the Korean conflict.

Succeeding Mr. Wooten as division manager at Wilmington is J. H. Pate. Mr. Pate, a North Carolina State graduate, was formerly assistant manager at the Armour Fertilizer Works Division at Norfolk, Va.

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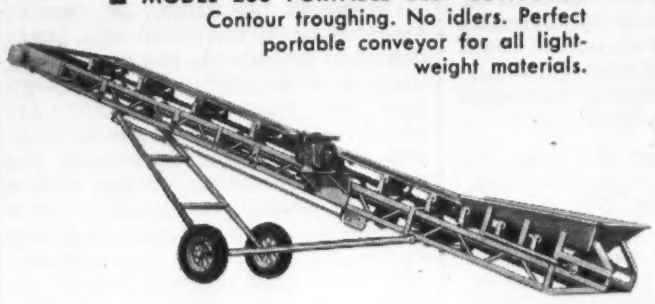
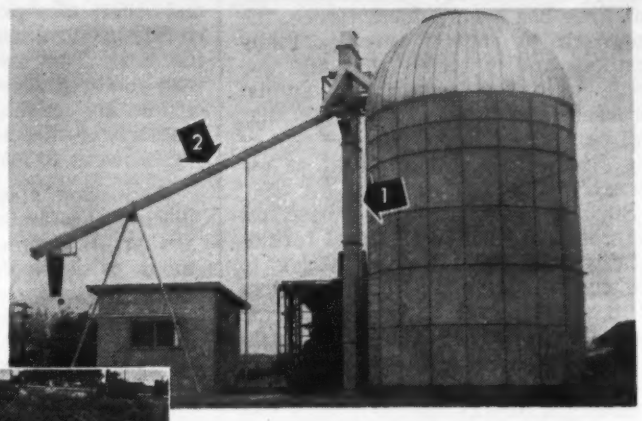
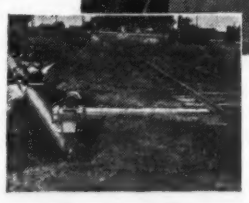
Contour troughing. No idlers. Perfect portable conveyor for all light-weight materials.





■ MODEL 175 BELT & BUCKET ELEVATOR
No. 1, at right. Fully enclosed. Centrifugal discharge for permanent or temporary installations.

■ MODEL Q STATIONARY SCREW CONVEYOR
No. 2, at right. For materials that roll or become fluid in motion. Capacities to 30 TPH. (70# material)



■ MODEL UT-51 UNDERTRACK CONVEYOR
At left, convenient boxcar-to-plant conveying replaces obsolete "batch" handling. Handles 25-30 TPH. (70# material)

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FUNGICIDE COLLOQUIUM

(Continued from page 6)

spectional activities," Mr. Rankin declared.

He added, however, that FDA laboratory facilities are limited and it is not possible to run samples for spray residues for all who might like to have such tests made on their crops. However, if high residues are indicated before a crop has been placed in interstate commerce, "we will get in touch with the appropriate state authorities immediately so that steps may be taken to reduce the residues prior to shipment," he told the colloquium.

The role of systemics in plant disease control was given a thorough discussion by Dr. H. C. Young of the Ohio Agricultural Experiment Station, Wooster, who declared that systemics will necessarily play an important role in controlling the great number of plant diseases that is not affected by presently-available fungicides.

The term "systemic," he said, infers that the chemical must be present in part or entirely throughout the tissue of the plant. However, the scope of this type of action needs a considerable amount of qualification, he added.

The use of chemotherapeutants, injected into or fed to the plant and absorbed throughout its system, is the ultimate of thoroughness in systemics, Dr. Young told the group, and if it could be made to work, would be an ideal and effective method of plant disease control. But there are many obstacles lying in the way.

"First," he said, "in order to penetrate the plant, the material would have to be exceptionally non-phytotoxic because of the high concentration at the point of entry. At the same time, the material would have to be powerful because of the great dilution that must occur in the plant. In the third place, he said, the chemotherapeutic material must not change the structure or physiological action of the host plant. And, of course, the residue must not be poisonous to people when it is used on food crops.

Control programs in the past were adequate for many of the plant diseases that are caused by fungus parasites, but had little or no effect on diseases caused by bacteria, viruses and many fungi, Dr. Young said.

Modern Outlook Involves New Approach

The most modern outlook for plant disease involves a "new approach," Dr. Young continued. "Since the diseases not now being controlled gain entrance to the plant in a manner in which the protective sprays are ineffective, they must be treated after entrance has been gained. Hence, the approach to control involves many methods and materials that are now being used for human and animal diseases. This requires materials that can be applied directly to the seat of the disease, whether internal or external."

Such a need naturally caused researchers to turn to chemical formulations that have been effective in the control of animal diseases. Most of the antibiotics used in medicine have been tested against bacterial diseases of plants, he said, and in addition there are many that are specific for fungus disease control and a few that may assist in virus disease control.

The other group of curative formulations is composed of synthesized chemical compounds, but their role is much more complex and difficult in control of plant diseases. First, he said, the soil from which the plant derives its organic materials is highly destructive to many antibiotics and the prepared chemical compounds. In the second place, the circulatory system of a plant is very inefficient when compared to that of animals.

Whereas, in animal diseases, control is very specific, broad treatments are desirable in the control of diseases in the plant kingdom. Pathologists for years have attempted to develop broad treatments for plants, but in the control of the remaining diseases, specificity will assume an all-important role, it was pointed out.

The Ohio pathologist said there are many reasons for this. Parasites, he said, are living individuals and their structure, physiological action, nutritional needs and environments differ. Many require a specific host and the reaction to chemicals on the part of parasites may vary widely.

Reaction of Host Plant To Be Considered

The reaction of the host plant is also to be considered, since its response may render the chemical completely impotent. Also, the chemical may change the action of the host plant, rendering it either more susceptible or more immune, Dr. Young said.

In some cases, he said, the chemical may actually alter the plant's genetical makeup, destroying certain genes. "It has been proved that the genes responsible for susceptibility may be altered by a chemical, thus rendering the plant resistant. Considerable work in this field is in progress with antibiotics and other systemic compounds. The possibilities of disease control in this category are many. Expensive chemicals may be economically used," it was stated.

Dr. Young said that another factor concerns the systemic chemical itself. Preliminary results with chemotherapeutants indicate that no prediction can be made of their effectiveness. Consequently, it has been necessary to develop an entirely new concept of screening procedures and testing methods. A few examples of unexpected action: Streptomycin is reported to be a bactericide, yet blue mold of tobacco is controlled well with it. Streptomycin is not very toxic in vitro to fire blight, yet it is very toxic in vivo under certain conditions. Some manufacturers have said they are going back to review many discarded compounds and are finding some active as systemics.

The movement of systemics in plants is another complicating factor, Dr. Young said. It has been shown that individual antibiotics vary tremendously in their movement when placed on or in plants. Certain ones move only up, others move only down, and others may penetrate only slightly. Their movement is influenced by the host. The same situation exists with the synthesized chemical formulations. He concluded that more basic research is still needed to determine the answers to many questions.

Appearing also on the panel to discuss systemic fungicides was Dr. W. J. Zaumeyer, U.S. Department of Agriculture, Beltsville, Md., who reported on the control of two vegetable diseases, downy mildew of lima beans and late blight of tomatoes, with antibiotic sprays. His comments (Croplife, Jan. 2, page 1) indicated that better results were obtained with crude forms of the antibiotic than with pure forms. Heretofore, Streptomycin was thought to be more or less specific for bacterial diseases, but work by Dr. Zaumeyer and coworkers indicates that it is also effective against at least these two fungus-caused diseases.

Control of nematodes was the subject covered by J. N. Sasser of the North Carolina Agricultural Experiment Station, Raleigh. He said that two broad categories exist in coping with the nematode situation. The first is that of "exclusion," which is an effort to prevent the introduction of the pest to areas where they are not presently located. The other category is "learning to live with them" when they are once established.

In the first case, he said, "exclusion" is accomplished at several levels, including international, interstate, or on a very local level, such as preventing spread from one field to another on the same farm. This program is accomplished by refusing shipments of materials containing nematodes, or if accepted, requiring that they be freed of nematodes by sorting, fumigation, hot water treatments or disinfesting dips or washes.

"In spite of these precautions, some nematodes will be introduced and then the task is to prevent them from spreading into new areas," he said. Examples of forms which have received considerable attention in recent years are the Golden Nematode, known to occur in this country only on Long Island, N.Y.; the soybean cyst nematode, known to occur in this country only in North Carolina, which may or may not be an introduced pest; the potato rot nematode known to occur only in Idaho and Wisconsin; the tobacco cyst nematode, known only in Connecticut and one or two others.

"While it is certainly desirable to maintain and if possible improve the efficiency of this program, in the past too little emphasis has been placed on local exclusion such as preventing the spread of forms we already have." The latter, he said, include the root-knot, meadow, stunt, spiral, dagger, ring, sting, and stubby root as well as others. Some of the latter actually are much more difficult to control than the former, because of wide host ranges involved.

Control programs become more complex and difficult with the introduction of each group, he pointed out, because rotation programs which would control one group or certain species within a group, become almost impossible where several forms are involved. Dr. Sasser expressed the opinion that existing laws and practices with reference to this type of nematode spread should be "reviewed and improved." The seriousness of the problem should be brought to the attention of various agencies and additional training for inspectors should be provided, he said.

In covering the second phase of the nematode situation, Dr. Sasser said that "learning to live with the nematodes" is accomplished by several methods. These include a combination of crop rotation and cultural practices; use of resistant varieties of plants; soil fumigation and nematocides.

Use of Fumigants Shows Big Expansion

Discussing fumigants, Dr. Sasser said that the development of a practical field nematocide has given more impetus to the science of nematology than any other single factor. He added that fumigants such as D-D and ethylene dibromide provide the grower and research worker with a yardstick whereby they could compare the yields and quality of crops grown in soil relatively free of nematodes, with those grown on soil heavily infested with them. The use of fumigants has expanded greatly since 1949 when only about 100 acres were treated, he said. In 1955, approximately 210,000 acres were treated.

The speaker named some of the more promising nematocidal products now available either for testing or for commercial use, and declared that one of the most encouraging points about the newer products is the probability that they might be used on living plants. "The value of such a material cannot be overemphasized and it is hoped that in the future, more research will be devoted to the development of such materials by chemical companies," he said.

A plea for the training of more graduate students in the subject of phytonematology was made by Dr. Sasser. He expressed interest in existing workshops and said that these must be continued as long as there is a demand for this type of training.

Another service of benefit would be a soil-testing service for plant parasitic nematodes. Knowledge of the nematode situation is the key to the formulation of effective control measures, he said, regardless of whether such measures may be soil fumigation or crop rotation.

Grower Does Not Have Information He Needs

Three basic questions should be answered before intelligent control is possible. These are: What kinds of nematodes are present? What is the level of population of each kind? What is the disease-causing potential of the existing population upon the crop to be grown? "At the present time, the grower does not have the answers to these questions because the information he needs is not available," the speaker observed.

The part to be played by industry in meeting the fungicide requirements of agriculture was discussed by Gordon A. Brandes, Rohm & Haas Co., Philadelphia. He emphasized the importance of industrial research and declared that "we would still be back in the days of homemade Bordeaux mixture and crude sulfur were it not for the modern chemical industry." He added that "the greatest contribution the industry makes toward meeting our fungicide needs is producing these chemicals in quantity, standardizing their quality, and getting them to the farmer and the gardener at a reasonably low cost."

Mr. Brandes reviewed briefly the development of commercial preparations, declaring that "in the past two decades we have seen the commercial development of several new organic fungicides as replacements for the inorganic sulfurs and coppers on some of our most important crops and diseases." The farmer today has a choice of a wide variety of fungicides with special types and formulations of each to meet particular crop, disease and application requirements, he went on. The farmer 25 years ago had a choice only of sulfur and Bordeaux mixture.

Mr. Brandes then reviewed the development of many types of fungicidal materials, pointing out that various products now enjoy worldwide use in plant disease control.

All of the organic fungicidal compounds have one characteristic in common, he went on. "Every one of them was first synthesized in the research laboratory of a private industrial chemical company. None was discovered by accident, but rather are 'the result of a systematic exploratory program planned to find biologically active compounds.'"

That research and development costs of fungicidal products are unusually high, was a fact set down by Mr. Brandes. He said that the research and development costs on agricultural pesticides per dollar sale of these materials are roughly twice the cost of these expenditures for the general line of industrial chemicals. "Whereas, the average company's research budget may run 4 to 5% of sales of its general line, it is not at all uncommon for the research and development costs on agricultural chemicals to run 8 to 10% on the dollar sales volume," he said. "At any rate, costs are extremely high and they are borne almost exclusively by the chemical manufacturer," it was stated.

AT NEBRASKA CONFERENCE—L. N. Elson of Elson and Sons at Curtis, Neb., left, was honored during the Nebraska Fertilizer Dealers Conference for his top yield of 155 bu. on irrigated land in the "Reach for Top Corn Yield" program. Ralph George of South Sioux City, Neb., right, grew 135 bu. per acre for top yield among dry-land farmers. Dr. Malcolm H. McVickar, chief, agronomic education with the National Plant Food Institute, Washington, D.C., center, was principal speaker at the banquet honoring the corn growers who had high yields in the program.

CORN CHAMPS HONORED

Nebraska Fertilizer Dealers Hear Reports on Soil Fertility

LINCOLN, NEB. — More than 300 persons met in Lincoln, Neb., Jan. 3-4 for the annual fertilizer dealers conference. The meeting featured discussions on use of commercial fertilizers and good cultural practices in crop production.

At the opening session, Dr. Robert A. Olson, associate professor of agrononmy at the University of Nebraska college of agriculture, told the dealers how nitrogen fertilizer stimulates crops to use more phosphorus. He explained that when fertilizer containing both nitrogen and phosphorus is placed in a concentrated band or zone near the plant, the roots grow more abundantly in the fertilizer zone than elsewhere in the soil mass.

"If a farmer wants to fertilize the crop at a low rate and get maximum efficiency from the applied phosphate, he should apply a mixed fertilizer close to and beside the row when planting," Mr. Olson said.

If the mixed fertilizer is placed in contact with seed in dry soil, injury to germination and stand may occur, the soils authority said. But when planting small grain, if placement is beside the row and an inch or two away from the seed, all of the nitrogen needed can be supplied as mixed fertilizer with the phosphate, without risk to germination and stand. At the same time, maximum benefit of the nitrogen and the efficient use of fertilizer phosphorus is obtained.

E. M. Brouse, assistant agronomist at the College of Agriculture, told how wet meadows respond to fertilizer application. Yields were doubled on sixteen of the 20 sub-irrigated meadows fertilized in 1955. All of the sixteen meadows contained some clover, and most profitable response was from the application of 40 to 80 lb. of available phosphate. A combination of 40 lb. of available nitrogen and 40 lb. of available phosphate was also profitable.

Dr. Malcolm H. McVickar, chief, agronomic education, of the National Plant Food Institute, Washington, D.C., was the main speaker for the two day affair. Dr. McVickar pointed out that farmers should not substitute one good farming method for another but use a combination of all good methods to increase his production and thus cut down on unit costs. It was further pointed out by Dr. McVickar that irrigation is important in the production of high yields and that the methods used in irrigation must be tailored to the individual farm and to the labor needs of the particular farmer. He said that you cannot expect water to replace fertilizer.

Effects of fertilization on chemical composition of wet meadow vegetation was reported on by Alan Moore, agronomy graduate student.

Latest developments in the use of trace elements were described by Dr. Leon Chesnin, associate professor of Agronomy at the University.

Roy Lipps, agronomy instructor, reported on an experiment conducted in 1955 in the Nebraska North Platte River Valley designed to measure the root activity of sub-irrigated alfalfa using radio active phosphorus as an indicator.

Dr. E. C. Conard, associate agronomist, discussed the results of a six-year study on the effects of nitrogen fertilizer in relation to precipitation, on yield and chemical composition of several perennial grasses.

Those attending the conference heard about the methods used by some growers in producing 150 bu. an acre corn yields when 20 Nebraska farmers were honored in the "Reach for the Top Corn Yield" educational program.

M. D. Weldon, University of Nebraska extension agronomist, said that the purpose of the program was to help Nebraska corn growers get bigger and more profitable yields. The points emphasized by the program are: conserve moisture, prepare land properly, provide soil fertility, select good hybrids, treat seed, plant at the right time, rate and depth, control pests, control weeds and avoid root injury, irrigate efficiently and harvest properly.

Top growers in the irrigated section were Elson & Sons, Curtis, 155 bu.; Glen Nelson, Comstock, 153 bu., and Max Loibl, Cozad, 151 bu. Top growers in the non-irrigated section were Ralph George, South Sioux City, 135 bu., Clarence Tegtmeir, Burchard, 114 bu., and Marvin Dunn, Holmesville, 108 bu.

Other speakers on the program included Dr. E. F. Frolik, associate director of Nebraska experiment stations; Robert Roselle, extension entomologist; Clinton Hoover, graduate assistant in agronomy; Delno Knudsen and W. E. Ringler, assistant extension soils specialists; H. F. Rhoades, agronomy professor and Fred Koehler, assistant agronomy professor.

Northern California Wringing Out From One of Worst Floods

By ROY HITCHCOCK
Croplife Special Writer

SAN FRANCISCO—Northern California is attempting to shake itself dry from one of the worst drenchings in her history. Recent floods have caused an estimated loss of $500 million and damaged 600,000 acres. One week long storm poured a record 13 to 18 inches of rain in an area 450 miles long and 200 miles wide.

In the northern Sacramento Valley and upper San Joaquin Valley areas, where the storm hit the hardest, 150 square miles of cling peach and crop lands were covered eight feet deep when the dykes on the Feather River let go just above the town of Yuba City, Sutter County. To the south some 120 miles in San Joaquin County, another 38,000 acres were flooded as four rivers leaped their banks despite heroic efforts on the part of battling farmers and volunteers.

Along the coast from Monterery County to the Oregon line some 500 miles north, farm lands went under water as coastal mountain streams pushed buildings and banks aside in a mad dash across many acres of California's best berry, fruit and vegetable lands. In mountain areas high winds and heavy rains sent landslides crashing across roads and rails tearing out communications and power in their path.

Luckily for agriculture, the actual crop damage was light. All crops with the exception of winter vegetables being harvested experienced little damage, but orchards and vineyards that suffered loss of trees and vines will have to be replanted and rebuilt before any future production will be forthcoming.

Alfalfa and Ladino seed fields in the Sutter basin and the Delta land of the San Joaquin and Sacramento Rivers were the hardest hit of any forage crops. Grains in farmer stored bins in these areas, chiefly barley, corn and rice, were damaged but dealers' stores were not harmed, a government survey discloses.

Permanent pastures were damaged to some extent and many fields, both permanent pasture and alfalfa, ended up with from one to three feet of silt on them. Where waters flooded and receded slowly, silt settled quickly and little land damage other than smothering of the crop occurred. Where waters coursed through the land gutting and erosion is severe.

In the flooded areas livestock men were warned about hay in the barn being wet and a possible internal combustion because of the condition. Considerable loss due to mold and rotting is occurring also. Alfalfa, where lands had been gently flooded and the receding waters left little damage, was expected to go ahead and produce a crop if the waters do not stand on the land too long. The weather, however, continues to be non-cooperative on this point. Farmers are in hopes that by planting time in April many of the flooded acres will again be ready for crops. In one way the flooding aided some lands by depositing silt, thus adding to the top soil and therefore aiding in future fertility.

All counties affected have given what information they could but in most instances full damage will not be known for many weeks. It must be remembered that although many acres were affected in such crops as hay and seedling grains, it is only a small portion of the over-all production in these crops for the state at large. A report from Austin E. Mahoney, San Joaquin County agricultural commissioner, shows the damage in this stricken county as an example of what others are likewise faced with in the flood areas.

"A total of 38,700 acres of agricultural land were flooded in this county," Mr. Mahoney states. "Of this, 13,000 acres were in pasture. Although there was some loss in pasture land due to keeping livestock out of the fields during floods and for some time afterwards, this loss was much smaller per acre than that suffered by farmers having land planted to other crops.

"Almost 2,800 acres of alfalfa were inundated and loss will depend on many factors. Where water did not stay on fields very long, the crop will probably recover satisfactorily, depending on soil. Seedling grains in many areas were rooted out by the rushing waters. Onions, sugar beets, peas, spinach, corn and berries were damaged along with 1,600 acres of asparagus in the county.

"About 30 head of livestock and 5,000 chickens were lost; further losses to livestock will probably never be known. Where livestock was standing in water and without proper feed supplies for any length of time, the loss of weight will be considerable. In places dairy cattle were not milked at the proper time or the entire milkings were postponed for days.

"Property losses to tractors, harvesters, pump motors, granaries, buildings, feed, tools and other assets other than land were staggering. Many of the items were total losses. Monetary values of the losses are practically impossible to estimate at this time but will certainly be in excess of $150,000."

Throughout the storm area property damage from all sources is estimated to run in excess of $125,000,000. This not only includes agricultural losses but damage to businesses, homes, streets, roads, personal properties and other unknown damages yet to be determined. In many ways agriculture received less of a loss than many other industries such as power and communications. It will be many months, however, before the central and northern portion of California will be operating at normal again.

Spraying Boosts Alfalfa Yields in Maryland Test

ELKTON, MD.—Use of insecticides for control of alfalfa weevil resulted in increases in alfalfa yields of from two to five tons net weight per acre in tests conducted in Cecil County, Md. last summer.

The tests were under the supervision of P. W. Sandelmann, University of Maryland weed control specialist; Thomas Lippincott, of Colora, on whose farm the experiments were run, and Raymond Mueller, county agent.

Malathion, heptachlor and dieldrin were used in the tests. They were applied at the rate of 40 gal. of spray per acre.

The tests showed that two appilcations were more effective than was one.

The tests showed that two applications were treated on April 15, April 23 and May 3, and plots given two applications, on April 15 and May 3 and April 12 and May 13.

Plots which had two applications were protected through May 20, the date on which the alfalfa was sampled and checked for damage.

Single applications were less effective than two spray applications. Alfalfa treated with single spray applications showed considerable damage by the testing date.

SHADE TREE CONFERENCE

MANHATTAN, KANSAS — The second annual shade tree conference at Kansas State College will be held Jan. 26-27.

Panel Discussions Feature Mississippi Insect Control Conference Attended by 250

STATE COLLEGE, MISS.—More than 250 farmers, agricultural workers, entomologists, insecticide dealers, formulators and aerial applicators heard the nation's top authorities on insect control at the second annual Mississippi Insect Control Conference at Mississippi State College during early January.

Included among the speakers were K. P. Ewing, United States Department of Agriculture Cotton Insect Section Research Branch, Washington, D.C.,; Dr. George C. Decker, Illinois Natural History Survey, Urbana, Ill., past president, Entomological Society of America; and W. C. McDuffie of the USDA Entomology Research Branch, Beltsville, Md.

Speaking on the Miller amendment to the Food, Drug and Cosmetic Act, Dr. Decker emphasized that most pesticides have only a few approved uses. "Just because a pesticide can be bought at the market place does not mean that it can be used carelessly and without danger on any and all crops," he stated. "It is imperative that growers determine in advance that the particular pesticide has label acceptance for a specific pest and crop."

Dr. Decker added that manufacturers of insecticides and other pesticides spend millions of dollars each year on research required to back the validity of labels; thus labels on pesticide containers may rank with the most costly literature in the world.

"Generally, pesticide users who carefully read and closely follow instructions and warnings on pesticide labels will find little difficulty in meeting established residual tolerances," he said.

"When a grower ignores the label and takes matters into his own hands, or uses the pesticide material experimentally, he assumes a calculated risk for which he and he alone is responsible."

When all provisions of the Miller Amendment go into effect, fresh fruits, vegetables and other raw agricultural products moving in interstate commerce after that time will be subject to inspection by representatives of the Food and Drug Administration.

Some condemnations and confiscations may be anticipated if pesticide residues in excess of established tolerances are found on such products, it was pointed out.

In a report of research results of use of systemic insecticides on cotton insect control, K. P. Ewing stated that results obtained from the new systemic, "thimet" justify limited farm trials during 1956 for control of thrips, aphids and spider mites.

However, he emphasized that such trials should be conducted on a limited grower basis, under the close supervision of entomologists until general recommendations can be made. He indicated that high hope for successful boll weevil control through systemics depends on finding a material that will give control lasting eight to 12 weeks.

"More intensive research is needed," he said. "The present research program must be continued and greatly expanded."

W. C. McDuffie, reporting on the use of systemics in animal insect control, indicated that only limited results have been obtained so far, and that research is still in the experimental stage.

In a report on insect resistance to insecticides, Mr. McDuffie cited the continuing increase of resistance by some insects to chlorinated hydrocarbons. He indicated that organic phosphorus insecticides appear to be promising materials for control of such insects.

Some of the phosphorus compounds, including malathion, diazinon and Bayer L 13/59 are already being used extensively for control of resistant houseflies, mosquitoes, fleas and roaches, he stated. Studies so far show that these insects develop only limited resistance to phosphorus insecticides. However, high resistance could develop in time.

A highlight of the two-day program was the presentation of a distinguished service award to Dr. E. W. Stafford of Mississippi State College, for his 39 years of outstanding service to entomology. The plaque was presented by Dr. Clay Lyle, dean and director, Division of Agriculture at Mississippi State College, for the Mississippi Entomological Assn. of which he is a member.

At the annual meeting of the Mississippi Entomological Assn. held in conjunction with the Insect Control Conference, David Young, Jr., assistant entomologist of the Mississippi Agricultural Extension Service, State College, was elected president for 1956; Ed Broadus of Niagara Chemical Division, Jackson, vice president; and Roy Bailey of General Chemical Co., Greenville, secretary-treasurer.

New directors are R. P. Colmer of the State Plant Board, State College; Reid Faulkner of Chapman Chemical Co., Greenville; and L. C. Murphree of Coahoma Chemical Co., Starkville.

Panel discussions by chemical company representatives, practicing entomologists, county agricultural workers, insecticide applicators, farmers and cotton checkers were other highlights of the conference.

A panel on application of insecticides was participated in by S. L. Calhoun of Agricultural Chemical Corp., Greenville; Paul Lloyd of Planters' Flying Service, Blytheville, Ark.; O. B. Wooten, Experiment Station agricultural engineer at Stoneville; Dr. Charles King of the Stoneville Experiment Station; and Dr. W. W. Neel of the Experiment Station at State College. Moderator of this panel was Dr. E. W. Dunham, former USDA entomologist now retired, of Leland.

Reasons for cotton insect control failures were the subject of another panel. Participants were J. W. Pruett, cotton farmer of Sunflower County; Lewis Norris, cotton checker for Norris Pest Control, New Orleans; Lewis Garrison, county agent, Sharkey County; and Lloyd Faulkner of Chapman Chemical Co., Greenville.

This panel, moderated by L. C. Murphree, former extension entomologist, now affiliated with Coahoma Chemical Co., of Starkville, brought out that failures were not due primarily to insecticides. Among reasons given were faulty application, adverse weather and temperatures, and failure to follow entomologists' recommendations.

Moderated by J. C. Redd, of Redd Pest Control, Jackson, a third panel consisted of progress reports on economic entomology by C. A. Wilson of the Mississippi State College department of entomology; white fringed beetle and sweetpotato weevil by C. C. Fancher, supervisor, Southeastern Plant Pest Control Region of Gulfport; the progress made in preventing the pink bollworm from entering Mississippi by R. P. Colmer, chief inspector, State Plant Board, State College; and the qualities of insecticides by O. T. Guice, general inspector, State Plant Board, State College.

Other participants in the insect conference were Dr. Ross Hutchins, head of the Mississippi State College Department of Entomology; Gene Merrill of General Chemicals, Gulfport; Dr. J. W. Ingram, in charge soil insects attacking corn, State College; Dr. William Giles, superintendent, Stoneville Experiment Station Dr. Marvin Merkl, USDA entomologist at the Stoneville Station.

The meeting also included a brief discussion of the 1956 cotton insect control recommendations.

AT MISSISSIPPI MEETING—Some of the country's outstanding entomologists attended the recent annual meeting of the Mississippi Entomological Assn. at State College, Miss. In top photo are the new officers of the state group. Seated, left to right, are David Young, Jr., assistant entomologist of the Agricultural Extension Service, State College, president; Ed Broadus of Niagara Chemical Division, Jackson, vice-president; Roy Bailey, General Chemical Company, Greenville, secretary-treasurer. Standing are the directors: R. P. Colmer of the state plant board, State College; Reid Faulkner of Chapman Chemical Company, Greenville; and L. C. Murphree of Coahoma Chemical Company, Starkville.

In the middle photo, Dr. E. W. Stafford, left, of Mississippi State College is presented a distinguished service award for his 39 years of service to entomology. Presenting the plaque is Dr. Clay Lyle, dean and director of the Division of Agriculture at M. S. C. The award was made by Dr. Lyle on behalf of the Mississippi Entomological Assn.

The lower photo pictures some of the major participants at the meeting. Seated, from left to right, are Dr. Ross Hutchins, head, Mississippi State College Department of Entomology, State College; Dr. George C. Decker, past president, Entomological Society of America, Urbana, Ill., and Dr. Lyle. Standing from left to right are K. P. Ewing of the USDA's Cotton Insect Section, Research Division, Washington, D. C.; W. C. McDuffie of the USDA's Entomology Research Branch, Beltsville, Md., and A. G. Bennett, extension entomologist at State College.

Donald D. Dilworth

HEADS DIVISION—Donald D. Dilworth, vice president, has been named to head up the agricultural division of Klau-Van Pietersom-Dunlap, Inc., Milwaukee advertising agency. Four separate divisions have been set up to cover all phases of the agency's operations, embracing agricultural, industrial, general, and public utility advertising, merchandising and other marketing functions. Mr. Dilworth, who will have complete authority over 12 agricultural accounts, joined KVPD in 1946, having previously been affiliated with Iowa State College as assistant extension editor, and with the Ralston Purina firm preparing poultry feed advertising. He also was with Kenyon and Eckhart, Chicago. Born on a farm, Mr. Dilworth received his degree in agricultural journalism at Iowa State College.

Chemical Employment Gains in California

SAN FRANCISCO — Employment in chemical industries in California increased by 800 between October and November last year, according to figures released by the Division of Labor Statistics and Research of the California State Department of Industrial Relations.

There were an estimated 38,000 wage and salary workers employed in the manufacture of chemicals in the state during November, a rise from 37,200 the previous month.

Compared to November, 1954, the estimated gain was 500 workers—from 37,500.

Production and related workers earned an average of $89.39 during each week of November at the rate of $2.15 an hour for an average 41.6 hour week. This earnings figure represented a gain of 49 cents from $88.90 at the rate of $2.16 per hour for an average of 41.2 hours during October.

The average earnings figures compare with $84.20 earned in November, 1954, for 41.3 hours at $2.04 an hour.

PHYTOPATHS NAME OFFICERS

ATLANTA, GA.—Officers named at the 47th annual meeting of the American Phytopathological Society here Dec. 27-30 have been announced by the group. Dr. Helen Hart, University of Minnesota, St. Paul, became president, to succeed Dr. James H. Jensen, Iowa State College, Ames. (Croplife, Jan. 2, page 1.)

President-elect, to take office in 1957, is Dr. George Fisher, Pullman, Washington. Vice president is Dr. Neal R. Miller, head of the U.S. Department of Agriculture's plant disease survey, Beltsville, Md.; and councilor-at-large is Dr. S. E. A. McCallan, Boyce Thompson Institute for Plant Research, Yonkers, N.Y.

Wait-and-See Attitude Toward Proposal for Soil Bank Advocated

STATE COLLEGE, MISS.—A wait-and-see attitude towards the proposed "soil bank" plans was advocated by Grady B. Crowe of Stoneville, Miss., senior agricultural economist, Delta Branch Experiment Station, in an address at the Mississippi Section of the American Society of Agronomy meeting at Mississippi State College recently.

Mr. Crowe said that there have been so many different soil bank plans proposed, and so many different alternatives suggested, that it is not possible at present to tell which plan the government will finally adopt.

Mr. Crowe's speech followed a discussion of sulfur as a plant nutrient by Howard V. Jordan, U.S. Department of Agriculture soil scientist, and a panel discussion of new crops by several plant breeders of the experiment station staff. Mr. Jordan's chief point was that crop needs for sulfur at present are met partly by the sulfur which incidentally occurs in commercial fertilizers, but that as fertilizers devoid of sulfur come into use, it may become necessary to provide sulfur intentionally.

Dr. William L. Giles, superintendent of the Delta Branch Experiment Station, Stoneville, was elected president of the section. He succeeds Dr. Ivan E. Miles of Starkville.

Si Corley of Jackson, state commissioner of agriculture, was named first vice president, and Prof. O. V. Clark, subject matter specialist for the agricultural education department of the State Department of Education, was elected second vice president. Dr. C. Dale Hoover, head of the State College agronomy department, continues as secretary-treasurer.

At the first session of the two-day meet, Glenn C. Rutledge, experiment station editor, presided over a panel discussion on "Methods of Getting Information to Farmers." Others on the panel were Mrs. Edna Earle Wilkerson of the extension service publicity staff, B. C. Hurt, Jr., superintendent of the Flatwoods Branch Experiment Station at Pontotoc, G. W. Gilliam, vocational agricultural teacher at Randolph, C. F. Randle, county agent for Pontotoc county, Benton Fatherree, FHA representative from Jackson, Joe Culpepper, Spencer Chemical Co. of Kansas City, J. W. Pruitt, cotton grower of Inverness, and Fred Jackson, corn grower of Tutwiler.

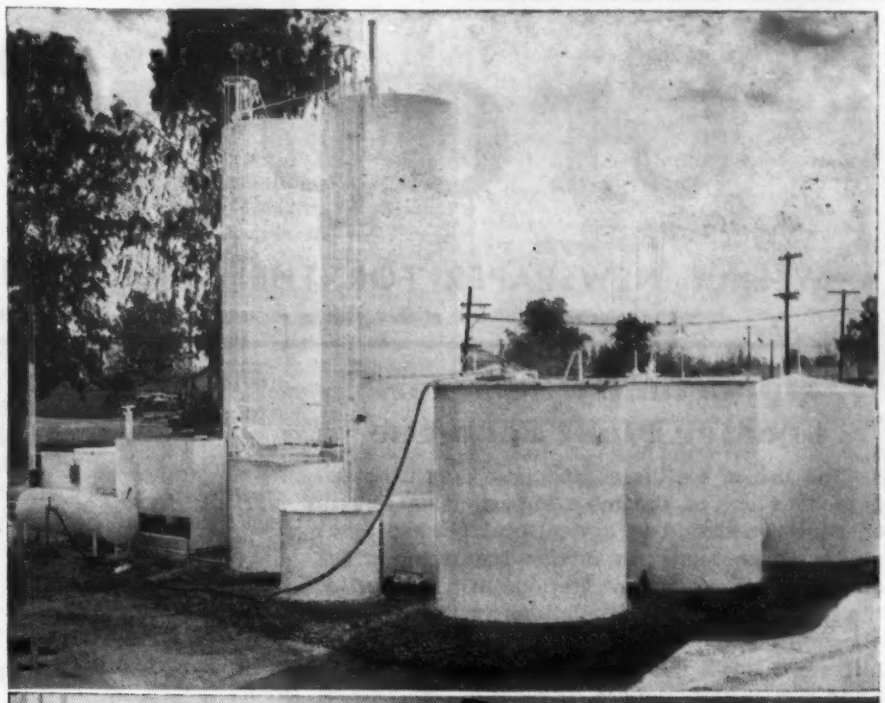
Later the agronomists made a tour of the Mississippi Seed Improvement Assn.'s headquarters located on the State College campus. At a banquet J. T. Caldwell of Jackson, manager of the Virginia-Carolina Chemical Corp., acted as toastmaster. Also at the banquet two State College students, Addison Davis Owings of Terry and John Keyes of Jackson, were announced as winners of scholarships worth $200 each offered by the American Plant Food Institute.

Ammonium Nitrate Output Shows Gain

WASHINGTON — Production of ammonium nitrate, original solution, 100% NH_4NO_3 in November totaled 183,449 short tons, a gain of 2% over October output of 180,737 short tons, according to the Bureau of the Census.

Synthetic anhydrous ammonia production totaled 267,078 short tons in November, a slight gain from 265,776 short tons in October.

Output of phosphoric acid (50% H_3PO_4) in November was 298,313 tons, down from 320,269 a month earlier. November production of nitric acid (100% HNO_3) totaled 199,341 short tons, a 5% gain from October output of 190,556.



LIQUID NITROGEN PRODUCTION STARTS—California Spray-Chemical Corp.'s new liquid fertilizer plant, adjoining the company's Ortho Products dust mill and warehouse in Modesto, Cal., began production recently. The new facilities, top photo above, can produce 400 tons aqua ammonia and 100 tons neutral mix fertilizer a day. It is the first plant to be completed in the $16,000,000 fertilizer plant program now being undertaken in California by the Standard Oil Co. of California, parent organization to Calspray. In the lower photo, taken at dedication ceremonies, are J. P. Arrigoni, vice president, Fabricated Metals, Inc., constructors of the plant, Arthur W. Mohr, president of Calspray, and George Wood, Calspray district manager.

CALSPRAY PLANT

(Continued from page 1)

plies and make the products more readily available to California growers."

The Calspray president also told the group that new formulations and refinements in manufacture will be put into effect in this new expansion program. He said that Calspray expects to "provide the Western grower with materials that will give more for his fertilizer dollar than ever before."

The Modesto liquid fertilizer operation was designed by George Wood, Calspray district manager, and Robert Hack, branch manager, in collaboration with J. P. Arrigoni, vice president, Fabricated Metals, Inc., constructors of the plant.

Robert Hack will head the Modesto plant operation, and Leslie R. Hamilton, coordinator of fertilizer operations for the corporation, has supervised the training of a corps of fertilizer specialists which has been added to Calspray's regular field service staff. W. E. Jaqua has been appointed supervisor of fertilizer sales in the western region.

Retirement and Three Promotions Announced By Chase Bag Co.

CHICAGO — Three promotions, a retirement and an office move have been announced by Chase Bag Co.

John P. Grady has been appointed assistant general sales manager of the company. Harrison B. Rue has been named eastern regional sales director. J. A. Sutherlin has been named manager of export sales, succeeding N. G. Kappler who retired Dec. 31 in line with the company's retirement program.

In connection with the promotion of Mr. Sutherlin, the headquarters of the Chase Bag export division was moved Jan. 1 from New York City to the firm's New Orleans branch, located at 4500 N. Dorgenois St.

Mr. Grady, as assistant general sales manager, will assist in the management of all functions related to the sale and promotion of Chase products, under the direction of W. N. Brock, vice president and general sales manager.

Mr. Grady has been eastern regional sales director for Chase, and previously served as manager of its Philadelphia branch and as manager of the advertising and sales promotion department. He joined the firm in 1939.

Mr. Grady will be located in the general sales office of Chase Bag Co. in Chicago.

The eastern region, which Mr. Rue has taken over, represents the territory and sales offices handled by the firm's Buffalo and Philadelphia branches, and its Richmond and New York sales offices. Mr. Rue will continue to make his headquarters in Buffalo and serve as manager of that branch.

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Northeastern states.

Opportunity Seen for Greater Plant Food Use

The use of fertilizers and lime is usually regarded as one of the most important factors in efficient production of agricultural products, but still the opportunity for further improvement lies ahead. When experiment stations in nearly all of the states make recommendations for fertilizer application far above the amounts normally used by farmers, there is indication that consumption both could and should increase.

Dr. E. T. York, Jr., head of the department of agronomy at North Carolina State College, in an article appearing in the state's fertilizer report for 1954-55, brings some of these points into focus. Since North Carolina is the nation's No. 1 consumer of fertilizer (1,849,199 tons, in 1953-54, according to USDA) statements from officials at Raleigh take on added significance, particularly when they say that much more fertilizer could be used profitably.

Dr. York reports that last year, North Carolina farmers spent between $80,000,000 and $90,000,000, or approximately 10% of their cash farm income, for fertilizers and lime. He then raises the question as to whether this is sufficient to realize the maximum benefit from the application of plant food. "Are we making most efficient use of the fertilizer now being applied . . . could we utilize to an advantage, more fertilizer than is now being used?" he asks.

"Perhaps with the exception of a single crop, tobacco, farmers are falling far short of using adequate amounts of fertilizer for the most efficient production," he declares. Does this mean that the many other crops grown in the south would net greater returns to their growers if more fertilizers were used?

Dr. York says he thinks so, stating that the average usage on most other crops is considerably below the recommended or most economic level.

With the use of recommended rates of fertilizer, we normally expect to get a return of from four to six dollars (and sometimes more) for each dollar that we spend for fertilizer. It is estimated, however, that to apply recommended amounts of fertilizers on all crops in the state, we would need to increase our usage by about 50%.

"Furthermore, soil tests indicate that to meet lime recommendations for all crops in the state, we would need to apply approximately ten times the amount used last year, followed by annual applications approximately 3 to 4 times our present usage."

Naturally, there is a wide gap between present use and the actual achievement of the ideal consumption of 2,773,799 tons that the state of North Carolina would use if the addition of 50% mentioned by Dr. York were actually applied. Probably this figure may never be reached, but it is worth setting our sights on.

During the current period of reduced acreages, it may be possible to demonstrate to many farmers that use of recommended amounts of fertilizer brings up net profits so that income from fewer acres may be as great as was formerly realized from larger cultivations.

The points brought out here are in no way limited to North Carolina nor any other area.

Both the manufacturing industry and its distributors and dealers will do well to keep in mind that if greater amounts of fertilizer and pest control products can be sold for each acre in production, lowered income resulting from the current crisis may be kept from becoming severe.

There is a possible by-product for future benefit, too. Farmers should learn through the trying experiences of today, that if use of recommended amounts of plant food on a few acres cuts costs and makes greater profits, then it should also work on a bigger scale. Acreage allocations won't last forever, and with proper training now, farmers should increase their applications on a full scale later.

Seizures Could Be Eliminated

A recent seizure of two carloads of lettuce in New York because inspectors of the Food and Drug Administration found them contaminated with an insecticide that was neither recommended nor permitted for use on this crop, should cause sober reflection throughout the trade. Here is a serious loss resulting either from a mistake on the part of someone or from lack of information on the part of the grower.

The lettuce, shipped from El Centro, Cal., was from a 40-acre field which was left unharvested after FDA inspectors sampled the first two carloads of produce taken from this plot.

This is an occurrence which need never happen with the reasonable caution that should be taken with the application of any pesticide. The fact that it is an unusual happening, indicates that perhaps 99% of farmers using pesticides on their crops, do so with a fairly good understanding of what is involved.

Comments of George P. Larrick, commissioner of the Food and Drug Administration, seem significant in connection with this incident. In stating that seizures because of insecticide contamination have been unusual in recent years, he indicates that "The food supply of this country is as safe as that of any country in the world."

At the same time Commissioner Larrick warned growers and all others concerned with processing and shipping of food crops that directions appearing on pesticide labels should be followed carefully.

"Agricultural dusts and sprays should be used only on the crops specified, at the times specified, and in the amounts specified," Mr. Larrick said.

"Growers do not have excessive spray residues on their crops when they observe proper precautions in using agricultural sprays and dusts, but misuse of such chemicals can leave poisonous residues that make a crop illegal in interstate commerce," the commissioner said.

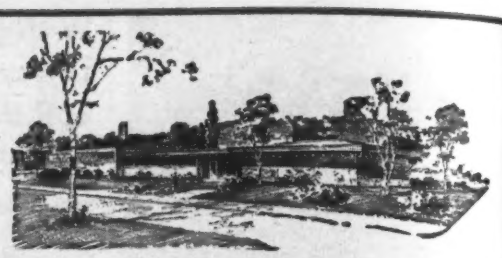
Who might be responsible for the error in the case of the contaminated lettuce, we don't know. But the incident should certainly remove any complacency from people who are inclined to become careless in using these various chemical products. "Eternal vigilance" is a must here.

Everyone in the trade responsible for selling, handling or using these materials must keep conscious at all times that application of the wrong material or even too much of the right product can bring trouble.

But on the other hand, it must not be forgotten that correct use brings benefits that far outweigh any hazards involved!

Quote

"Effective production control can improve farm income, especially if incentive payments are used to obtain participation. But, if the same amounts of labor and capital remain in agriculture, it can do the job only by forcing either unemployment or inefficient use of resources. In either case, it may not be a very satisfactory solution if the problem of overproduction is more than temporary."—Dr. Donald R. Kaldor, associate professor of agricultural economics, Iowa State College, Ames, Iowa.



Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Jan. 26-27—Custom Spray Operators Training School, University of Illinois.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Jan. 27—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver.

Jan. 30—Wisconsin Fertilizer and Lime Dealers Conference, Memorial Union, University of Wisconsin, Madison, Wis.

Jan. 30-31—National Cotton Council of America, Annual Meeting, Buena Vista Hotel, Biloxi, Miss.

Jan. 30-Feb. 3—Purdue Pest Control Operators School, Purdue University, Lafayette, Ind.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton State Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga.; W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9—National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 14-16 — Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-16—Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater, Okla.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., secretary-treasurer.

Feb. 16-17—Middle West Soil Improvement Committee's annual joint meeting of the fertilizer industry and Universities; Edgewater Beach Hotel, Chicago.

Feb. 18-20—Third Annual Pacific Northwest Agricultural Chemical Industry Conference, Imperial and Benson Hotels, Portland, Ore.

Feb. 20-21 — Southwestern Branch, Entomological Society of America, Hotel Texas, Fort Worth, Texas.

Feb. 22-24—Fifth Annual Ohio-Indiana Agricultural Aviation Conference, Ohio Union, Ohio State University, Columbus.

Feb. 22-24—Alabama Pest Control Conference; Alabama Polytechnic Institute, Auburn, Ala.

Feb. 22-24—Midwestern Chapter, National Shade Tree Conference; LaSalle Hotel, Chicago; Noel B. Wysong, Cook County Forest Preserve, River Forest, Ill., secretary.

Feb. 28-29—Fifth Annual Pesticide Chemicals School, Clemson House, Clemson, S.C., Dr. J. H. Cochran, Dept. of Entomology and Zoology, Clemson College, Clemson, S.C.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting; Hollywood Beach Hotel, Hollywood, Fla.; Lea S. Hitchner, NAC executive secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

April 10-12—Council for Agricultural and Chemurgic Research, 21st Annual Conference; Congress Hotel, Chicago; Sec., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

May 16-18—Synthetic Organic Chemical Manufacturers Assn., Annual Outing, Skytop, Pa.

June 10-13—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

July 12—South Carolina Fertilizer Meeting, Tour of Edisto Experiment Station, Blackville, S.C.

July 19-20—Southwestern Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 25-27—Northwest Association of Horticulturists, Entomologists and Plant Pathologists Conference, Northwest Washington Experiment Station, Mount Vernon, Wash.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., Secretary.

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Kraft Bag Makes Two Appointments

NEW YORK—A field engineer and an assistant sales manager have been appointed by the Kraft Bag Corp., a subsidiary of Gilman Paper Co.

P. E. Bray, who has been engaged in bag-filling machine engineering for many years, has joined Kraft to function as field engineer for the company's automatic bag filling machine—the Kraftpacker. He will also participate in sales and service on multiwall bags in the southeastern territory.

P. F. Finley, formerly in charge of the Baltimore sales office for Bemis Bro. Bag Co., has been appointed assistant sales manager for Kraft in charge of multiwall bag sales in the southeastern territory. He will report to F. L. Munger, vice president in charge of sales at Kraft Bag Corp.'s New York office.

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Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.

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Winners of Monsanto Safety Awards Named

ST. LOUIS—Monsanto Chemical Co.'s Monsanto, Tenn., plant, and Mound Laboratory, Miamisburg, Ohio, has been named the 1955 winners of the president's trophies awarded annually by the company for the best plant safety records.

The Monsanto, Tenn., plant, winner of the president's trophy among the Group I large plants, currently has operated 392 days for a total of 1,345,959 man-hours without a major injury. It is the second time that this plant has won the award, having won previously in 1948.

Mound Laboratory's top safety record among the Group II smaller plants marks the first time that it has won the president's trophy as a Group II location. It won the Group I award in 1953. The laboratory has operated 630 days for a total of 1,272,413 man-hours without a major injury.

Safety Improvement Awards for the most improved safety records over the past five-year period were won by the Everett, Mass., plant in Group I and the Seattle, Wash., plant in Group II. This is the second year that these two plants have won these awards.

Same Recommendations

ATHENS, GA.—No changes in the recommendations for cotton insect control in Georgia will be made for 1956, according to a recent announcement by C. R. Jordan, extension entomologist of the Agricultural Extension Service.

The Service is issuing to county agents throughout the state, its circular, "Cotton Insect Control" which was revised in February, 1955 and will continue to be used during the current season.

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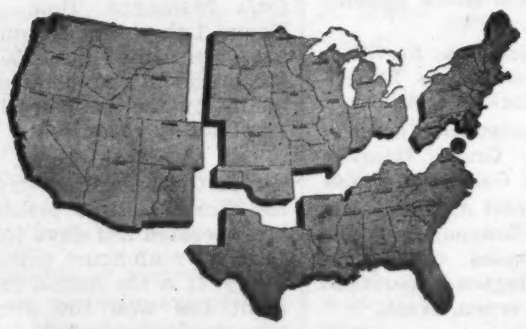
PERRYDALE, ORE.—The Elliott Feed & Seed Co., Perrydale, Ore., has been incorporated.

CROPLIFE's sharp, incisive reporting is studied every 7 days by the agricultural chemical industry . . .

CROPLIFE's spot diagnosis of the shifting agricultural chemical scene represents a powerful influence on this 2 billion dollar market . . .



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